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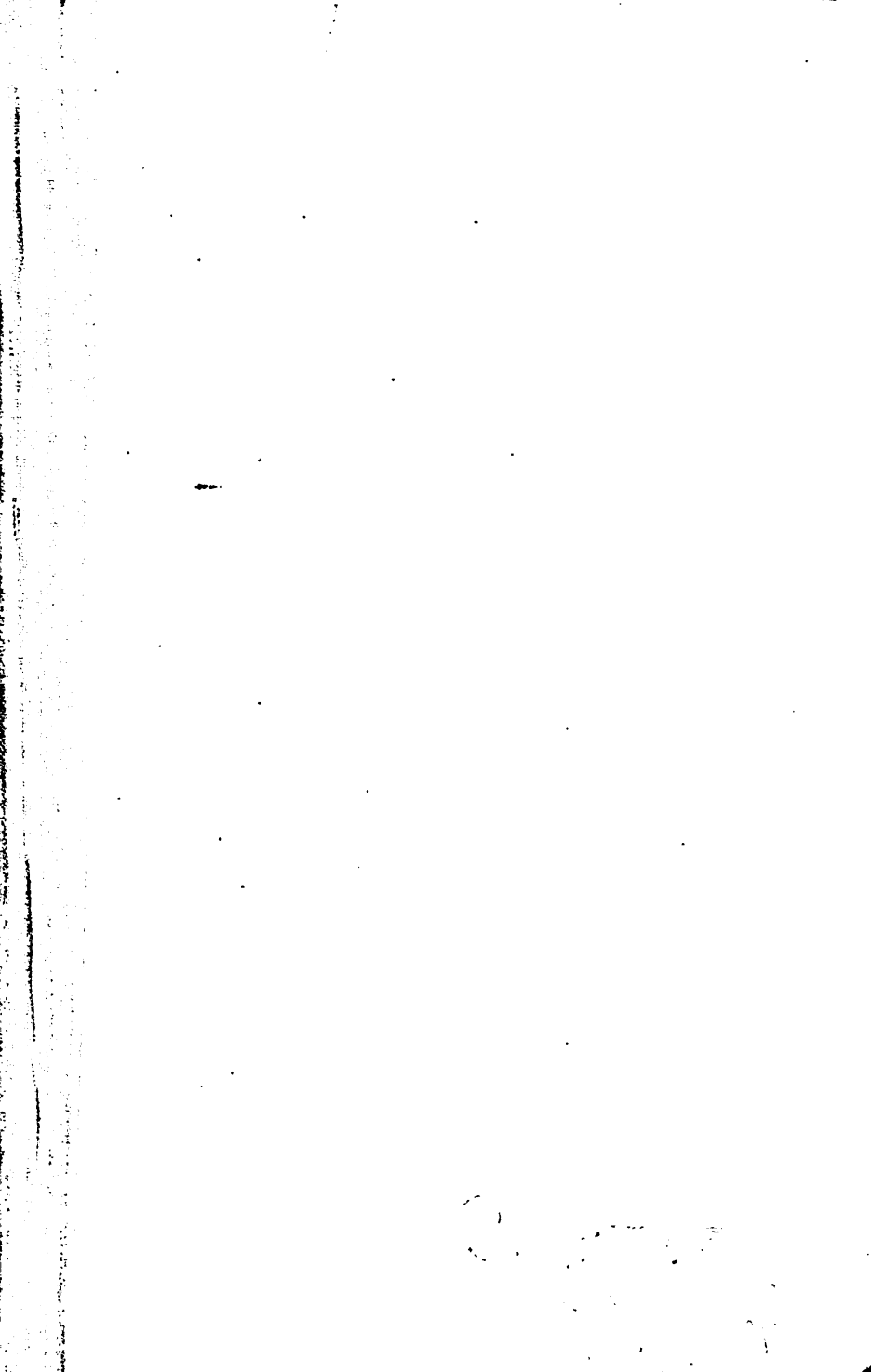
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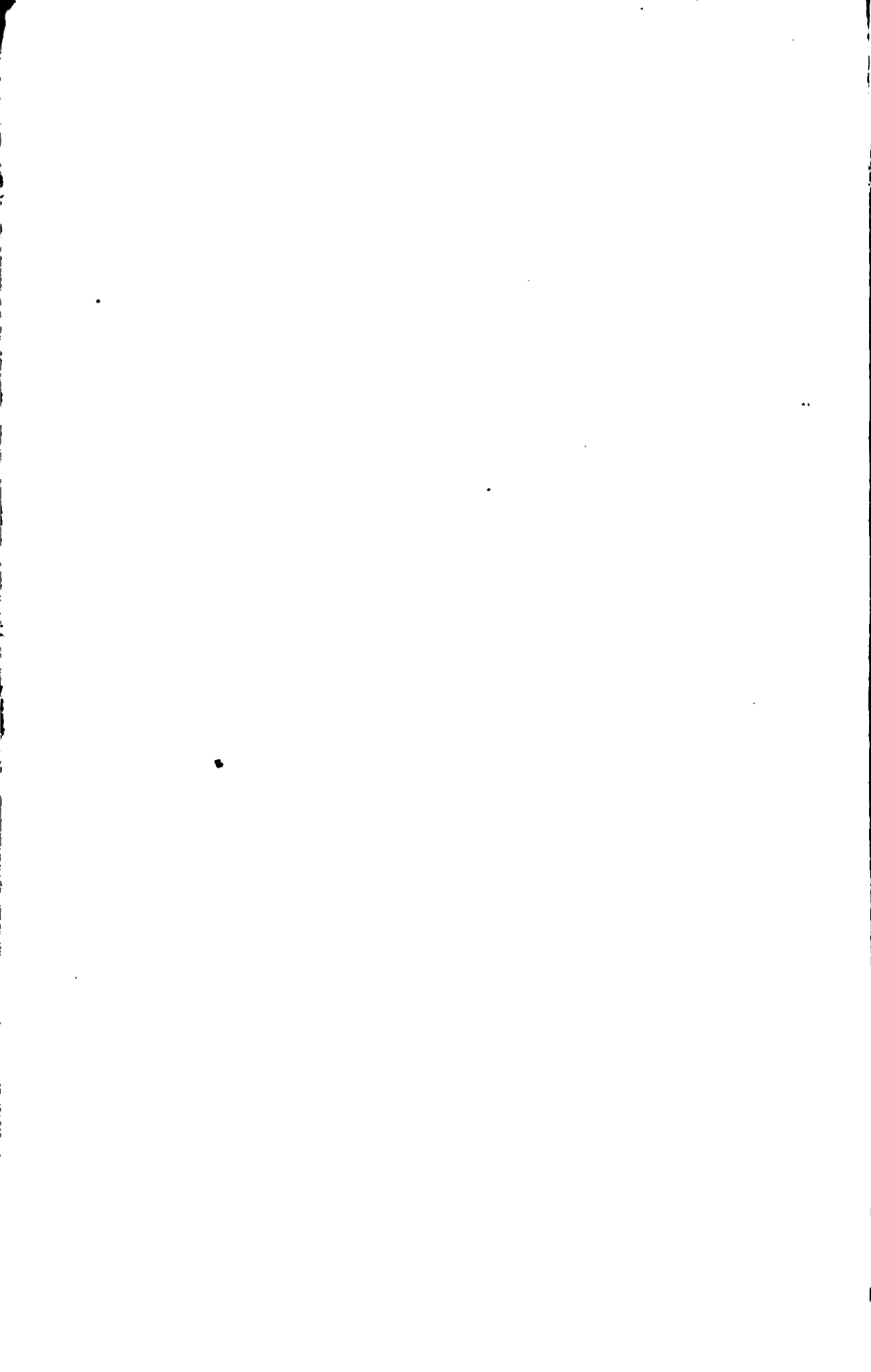
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**SPORTING FIREARMS
OF TODAY IN USE**



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ASTOR, LENOX
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CORRECT POSITION WITH THE PISTOL.

Arm fully extended, but not stiff, body well balanced, feet at right angles, thumb high on grip.

(Chapter IV)

SPORTING FIREARMS OF TODAY IN USE

BY

PAUL A. CURTIS, JR.

SHOOTING EDITOR OF "FIELD AND STREAM"

Captain (ret.) U. S. A., A. E. F.



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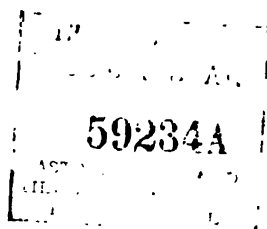
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FOREWORD

THERE is a worn and discolored leather-bound volume, with tarnished gilt edges, in my bookcase, that is a cherished possession, My Game Register—a gift from a splendid old British sportsman, who gave it to me as a boy, with the advice to keep in it always a record of clean sport which I would be proud to look back upon in the days to come.

Once in a while on a blustery day, when the air is keen and has that tang to it which creeps into every sportsman's blood, with an insidious cunning, making him forget the crowds and the noisy city streets about him and picture in their stead the stubble fields, with their many-colored backgrounds of frost-tinted hardwoods, or dreary expanses of lonely marshland, with the wind whistling through the sedge. I will go home disconsolately, with a longing in my heart, as does every sportsman cursed with a vivid imagination, which nothing can appease but a day afield under the autumn skies.

✓

18/22.

Foreword

So, I will light a pipe and settle back in my easy chair with the dear old book upon my knee, to dream again those cherished memories of vanished days. Days that will never be lived again, no matter how promising the future in store for me, they carried away with them the boyhood enthusiasm and left in its stead the calmer appreciation of mature years. I turn back the first pages, scrubby, yellow, written in the scrawling, misspelled hand of a small boy and glance over the meagre record of game bagged.

I see before me a vision of a yellow-wheeled dogcart, jolting along a country road, with a stout red-faced Englishman driving the stouter dobbin in the shafts, a lean Yankee beside him with a kindly gray eye. Under the seat on which a small boy was sitting, in a gunning coat many sizes too large for him, two perfect pointers were lying, trying their best to sleep, after a gruelling day afield—the last of the season when the birds were scarce and wild. The boy was tired too, but oh, so happy, for the bird on his lap, which he fondly stroked, was his first killed on the wing—and a cock pheasant at that—taken from under the noses of the two best shots in the township.

It was an epoch!!

Foreword

The boy had passed one of the great milestones in his life.

I slowly turn a few more pages, each representing a year gone by, each filled with a host of memories of the past which awaken into vivid pictures at the prompting of a few words set down so long ago.

I see a bleak expanse of marshland on a bitter December evening when the wind was blowing a gale and whipping the bay into a lather—What a night for black duck! The boy who had filled out into a lean, wiry lad, crouched in the thatch on a turn in the stream which meandered through the meadow. Suddenly he bent low and the blood pulsed warmly through his shivering body, as he spied a pair of birds slowly beating up the wind, wearily seeking a place to light.—When almost over him they bounce, towering into the air and turning back, with a quack that was almost drowned by the wind. The gun goes to his shoulder and as the flame shoots out into the dusk with an angry red gleam one of the pair crumples and falls away. The record shows that two more were added to the bag that night on Colgate's Marsh, and a pair of broad-bill that

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crossed the Neck ahead of him on the seven-mile walk home were added to the score.

I see him again, grown to a man, silently slipping through the woodland, rifle in hand on a frosty October morning. There is a crash and a deer bounds into view, tearing away through the underbrush, his white flag glistening in the sunlight—a sharp report rings out on the frosty stillness, resounding through the forest and echoing back and forth from hill to hill, as the buck springs convulsively into the air and falls.

I see him tramping through the corn stubbles of the South, with a brace of pointers and again in the hills of New England after grouse. I see him in a blind on the Chesapeake, waiting for red-heads, and again on a far Northern barren standing over his first moose.

I turn a few more pages, one by one, each showing a larger bag due to greater skill, more opportunities, and wider experience. The progress has continued up, until the last few pages—as proficiency still balances against depleted game fields that have been carelessly neglected and never replenished. The tide must turn in a few years, and the records in my game register will start to descend the scale.

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But no matter—if we can impart a little to others from the experience we have gained in the past we have warranted the opportunities given to us. Perhaps I can assist in setting the feet of some young Nimrod on the path to good sportsmanship. Perhaps I can stimulate a desire, awaken a slumbering instinct to become a follower of Diana. And if by chance I should, I might better yet, through the following pages, be the means of helping over some of those obstacles which retard proficiency. If so, I am repaid.

It has been aptly said that the preface is but an excuse for the existence of the book; hence this explanation. Herein is not a scientific treatise on modern gunnery. "Ye cranks," who crave the satisfactory explanation of the deepest ballistic problems, pass on! You will not find it here. The old standard works on shooting are sadly out of date, in view of the rapid development in firearms, and those of more recent origin are mostly composed of the catalogue data of our firearms manufacturers brought together in one volume and garnished with the familiar wood-cuts and plates from the same source, the reading of which cannot be other than dry and stale to

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the practical sportsman or the novice to whom the tables of rifle ballistics are at least confusing, and shotgun construction is not of interest beyond the results which are attained by it. For those who wish to go into the history of arms and ammunition and study its development from the dim past to the present there is ample literature both by American and European writers. There are no ballistic tables herein, no advice for the target shooter or the trap shooter; either will find plenty of men along the firing line more competent to give it under such conditions. No dissertations on what to take, what to wear, or how to camp—it is taken for granted that most of those who read this have already pored over other volumes on such subjects. It is believed that the average sportsman is far more interested in the practical results obtained in the field on game with modern arms than in all the range experiments and laboratory tests that can be conducted in the next decade. Consequently, I have confined my efforts to the most modern weapons, the most popular controversies which have been waged in the immediate past in the sporting periodicals, or if old topics have been touched

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upon it has been from a different angle than those which we have seen in print.

It will be noted that far more space is devoted to the scatter gun than to the rifle. It is believed that this is correct; there are ten shotgun shooters to every rifleman hunting and the rifle is more definitely known. The shotgun is still in a more transitory stage and in many respects is an unknown quantity, even to the makers. It is to be expected that the near future will hold great developments along this line.

The writer has owned or used all of the firearms of modern American make and most of those of Great Britain and the Continent and has killed practically all of the furred and feathered game found in Eastern Canada and the Atlantic States. One cannot help but acquire much information under such conditions that might be of value to others. It has been said that one cannot teach without learning and three years partly spent in assisting the readers of *Field and Stream* in selecting or improving their arms and ammunition has been a great help in the writing of this book.

The opinions, however, are personal ones, learned in the stern school of experience and

Foreword

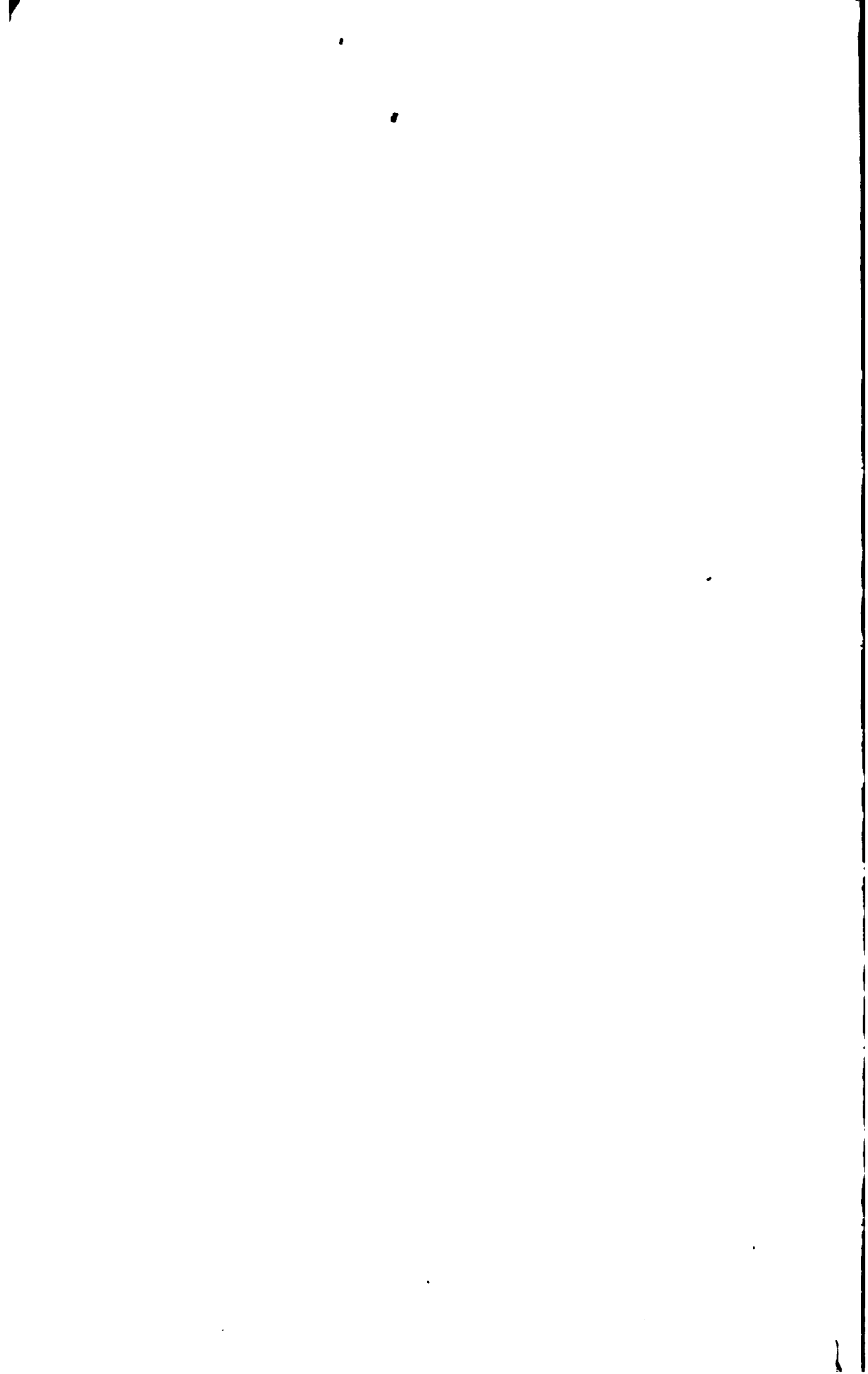
backed by the approval of most of our prominent big game hunters and wing shots. They are all open to controversy as they must be in the transitory stage of gun development through which we are passing.

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**SPORTING FIREARMS
OF TODAY IN USE**

SPORTING FIREARMS OF TODAY IN USE

CHAPTER I

CHOOSING THE RIFLE

IN selecting a big game rifle the first consideration to be settled is that of calibre, and the question naturally arises, Is the small bore, high velocity rifle as efficient as the large bore when it develops the same amount of energy? I would say that this has caused the greatest controversy that has ever been waged by gun enthusiasts. The argument has gone on, pro and con, for a matter of thirty years, or ever since the first small bore, high velocity rifle of note, the .30-80 calibre, model 1894 Winchester, was produced. Shortly afterwards it was followed by the .32 Special, the .38 Winchester and the .303 Savage, and slowly but surely the old timers' favorites, the .50-110, the .45-90 and the .45-70 were pushed to the wall.

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Improvements have been rapid. Hardly had these new weapons become established in popularity than a more advanced class began to appear, the ultra small bore rifle of extremely high velocity. The first of these was the .22 Hi-power, which in my opinion was an absolute failure. It was quickly followed by the Savage .250-3000 the .280 Ross and the .256, the .30 and the .35 Newton. So much for history.

I do not by any means consider the small projectile of the extremely high velocity rifle as efficient a killer as the heavy bullet of a medium or large calibred weapon at lower velocity, despite its many advantages. The rifle itself is not as heavy, the ammunition is much lighter and consistently a great deal more of it can be carried, which is very important on long trips into the wilderness. It was this and not greater killing power which made the .30-30 the most popular rifle ever developed, among the guides and woodsmen of the North and West, when it succeeded the old .45-70. The small bore, high velocity rifle also has the advantage of flatter trajectory, which does away to a great extent with the careful sight adjustment required with the big bore rifles for shots at long range. This

Choosing the Rifle

is extremely important to the novice or amateur sportsman who gets very little practice throughout the year and spends but a few weeks each season in the woods. Atmospheric conditions play an enormous part in judging distances, in shooting in the uncertain light in the woods or in the mountains where the air is rarefied and clear.

Unfortunately, the light, high velocity bullet is not as reliable. It often does queer things which are hard to explain and does not always develop the tremendous energy which the manufacturers and ballisticians credit to it. The light bullet is split up on impact when driven at too high a velocity for its weight, or strips off its nickel jacket on striking heavy bone, thereby losing penetration and shocking power. Sometimes it does not open up on soft tissue and goes completely through an animal without developing enough shocking power to drop it. For these reasons, it is not as reliable to use on very large game as a big slug.

Killing power in a rifle should not be judged by the muzzle energy. The .250-3000 cartridge develops 138 pounds more energy at the muzzle than the .45-70, yet it would be absurd to consider it as powerful a weapon. At three hundred

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yards its energy drops to 738 pounds, while that of the old .45-70 is still 1,000 pounds. The brick thrown at a man's head has not much velocity or penetration, but it has a lot of energy and the smashing effect of its blow is paralyzing. This is a good illustration of the big bore shooting a heavy bullet. The penetration may not be great. It may not pass completely through the animal, but it will hit with a paralyzing force that will usually stop the animal in its tracks, irrespective of where it is struck, or at least slow it up so that a second shot can be easily had to finish it.

The most dangerous game in the world is hunted in Africa, and although all of the biggest African game has been killed with small bore rifles by adventuresome sportsmen, the practical old timer never thinks of tackling the heavy animals with anything but a big bore, double barrel rifle or an Accelerated Express magazine rifle of .400 bore or larger developing 3,500 pounds energy or better. He is not experimenting. He knows his life may depend very often upon one shot and he knows that he can rely upon the big bore always doing what is expected of it.

American sportsmen are slowly learning their lesson; despite the great things predicted for

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them by their makers, the ultra small bore, high velocity rifles are losing prestige. The introduction of the new .300 cartridge by the Savage Corporation, despite the fact that the .250-3000 was previously advertised as being big enough for anything that ever walked, is an indication of the trend of popular demand.

The reaction which I predicted several years ago has set in toward the sane, logical weapon, developing high velocity with a long, medium calibre bullet, such a weapon as the .30-06 Springfield with the 180 or 220 grain bullet. There is also a need for a weapon of slightly larger calibre and high velocity for moose and Alaskan bear. In the old days, there were several low power rifles of about 38 calibre which were extremely popular, namely, the .38-72 and the famous .38-55. These are today almost obsolete because of their lack of speed and we have only the .35 Remington automatic, the .35 Winchester for the model 1895 box magazine rifle and the .38 Winchester in their place.

There is a big field for a cartridge developing between 2,500 and 2,600 feet velocity of about 35 to 38 calibre, firing a bullet weighing from 250 to 275 grains. Such a weapon would be splendid

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for America's biggest game. With such we would secure the fullest benefit of high velocity and flat trajectory without losing the undoubted advantage of the bone-smashing, blood-letting effect of the big bore.

The .35 Newton very nearly approached this except that its velocity was really too high for its soft copper-jacketed bullet. This bullet had been cut rather short to reduce weight as with the tremendous velocity attained, the breech pressure would have been altogether too high for safety had the bullet been heavier. Consequent test which I made with the .35 Newton led me to believe that the bullet was inclined to go to pieces too rapidly for really dangerous game, such as is found in Asia and Africa.

It is to be hoped that such a cartridge will be developed in the near future. It would fill the bill for many of the old timers who realize that the big bore has its disadvantages, but who don't wish to go to the extreme of relying solely upon light bullets which often do not function properly, occasionally jeopardizing the shooter's life when up against dangerous game and are not really sportsmen's cartridges as they so often allow a noble animal to escape only to die slowly

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from a fatal wound. There is an excuse for the trapper, explorer or colonist living in out-of-the-way places, where ammunition is scarce, shooting a small calibre rifle, as he has to carry a supply of ammunition sufficient to last for several months with which he shoots for subsistence rather than for pleasure, but this should be no criterion for the sportsman to go by. Killing in the name of sport, it should be his pride to do so with the weapon which will cause the least needless suffering to his quarry.

The trouble is that there has always been an element of extremists who allow their enthusiasms to carry them beyond the bounds of all reason. Because some men are finding the twenty-gauge gun just as good for Western duck shooting and general field shooting in their locality as the old favorite, the twelve-gauge, others will jump to the conclusion that it has entirely surpassed the old weapon for general purpose shooting, and then, going still further, ask why not use the twenty-eight gauge.

The craze for small calibre, high velocity rifles has led to many of them being used on game for which they are in no way fitted and for which they were never intended. They have

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been accountable for thousands of noble animals going away to die a slow and miserable death, besides causing innumerable tragedies when they failed to stop dangerous game. The old timer who has to trust his rifle many miles away from the nearest post-office knows that the weapon to be relied upon is the one throwing enough lead to deliver a paralyzing blow and to smash through heavy bone to the vitals without splitting up. The man who will deliberately hunt deer with a .25-20 rifle is guilty of an unsportsmanlike lack of respect for a dumb animal and it should be a punishable offense. We should be gun cranks without losing our sense of balance. The most worthy things are the practical ones. Don't spoil an expensive big game hunt; costing from five hundred to five thousand dollars, by using an old rifle, handed down by some relative, just because you happen to have it and think it will do, when fifty dollars more will provide one in every way suitable.

This squarely confronts us with the question of what is the best all round rifle for the North American continent. In my opinion the one weapon which approaches the ideal is a restocked sporting Springfield for the .30-06 cartridges,

Choosing the Rifle

equipped with a hand-made stock built by a master gun stock carver and provided with a number 48 micrometer peep sight, and an ivory bead in front. Such a rifle after being converted like my own, which is shown in the illustration, will weigh about seven and a half pounds, and is the last word in modern rifle development for balance, and elegance of outline. Should a rifle for the same cartridge be desired that is less expensive though lacking the refinement of the sporting Springfield, either the Remington model .30 or the Winchester model 1895 could be selected.

When used with the latest cartridges loaded with a 180 grain bullet at 2,750 feet muzzle velocity and attaining a muzzle energy of 2,970 foot-pounds, it is powerful enough for the largest game found on this continent in the hands of an accurate shot. Hand loaded cartridges can also be used loading with the 220 grain Lubaloy bullet and 54-1/2 grains of DuPont powder number 15-1/2 to give a muzzle velocity of approximately 2,450 feet per second and the high energy of 3,000 foot pounds. These cartridges would not develop a dangerous breech pressure, and would undoubtedly prove better in most instances for

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moose and Alaskan brown bear, which are usually shot at comparatively short range and sometimes in thick brush where the heavier bullet would penetrate with less mutilation before reaching the game. The soft point 150 grain Spitzer bullet is not too powerful for deer and has the flat trajectory so valuable for shooting at antelope, or sheep and goats, which so often afford shots at long range in the hills. At the same time reduced charges can be successfully loaded which are suitable for small game.

I can give no more convincing testimony to the efficiency of this splendid rifle than to cite my own experience with it. Out of six moose and four deer that I have shot at since I adopted the Springfield rifle I have bagged exactly six moose and four deer, in the season of 1921 killing three deer and the large moose shown in the illustration with five shots—the moose being dropped at 225 yards with two of the 180 grain bullets. No more accurate rifle was ever made, and by using the rejected Government ammunition, which is particularly good for target practice, lots of shooting may be indulged in without the expense entailed in buying the other expensive H.P.

Choosing the Rifle

loads. Thanks to the desire to encourage its use by the War Department, the Springfield is now easily procured by any citizen through the agency of the National Rifle Association, and can be quickly converted into the perfect sporting rifle by a competent gunsmith at reasonable cost.

The following list of big game cartridges and the rifles specified for their use are considered the best according to the order in which they are given. They can, of course, be varied to meet existing conditions, though it must be borne in mind that it is almost impossible to predict what would be the best rifle for an unknown person. Temperament plays too big a part in this selection. A cool-headed sportsman who is a good shot can satisfactorily kill dangerous game with a light rifle which would be almost suicidal for an erratic, excitable man to use. Such a man requires the most powerful weapon that money can buy—one that is capable of staggering the largest game with a single shot, even when the vital parts are missed.

My list in comparison with the great variety of cartridges and the different models of fire-

Sporting Firearms

arms upon the market is a small one and many sportsmen will be surprised to see their old favorite completely ignored. I have confined myself strictly to the most up-to-date weapons. If we were to include every possible aspirant, we might as well have no list at all but leave the matter to luck or to the sporting goods dealer to select the rifle for the novice.

To illustrate my point, the .45-70 still has its place for big bear and moose because it is such a wonderful killer and although its trajectory is high beyond 200 yards, dangerous game is seldom shot at such a long distance. Either the 9.5 Mannlicher or the .405 Winchester are infinitely superior to it from our modern standpoint, having higher energy and flatter trajectory.

For general Western and Northwestern shooting on such game as is included in the second division, flat trajectory is of prime importance, due to the range at which game must often be shot in such open country and consequently the cartridges recommended easily are the best of any that we now have.

For deer and black bear, there are a host of cartridges that are quite good enough. Twenty

Choosing the Rifle

years ago they were new but in view of the rapid developments of the military, long range, high velocity, super-accurate ammunition and their subsequent modification for sporting purposes, these old time high power loads have lost prestige and were in danger of becoming practically obsolete in the near future. I refer to such cartridges as the .25-35, the .30-30, the .32 Special, the .33 W. C. F., the .303 Savage, .25, .30, .32 and .35 Remingtons and the 8 and 9 mm. Mausers and Mannlichers.

Undoubtedly, due to the development of superior progressive burning rifle smokeless as an outcome of the recent War, all of these loads have received a new lease on life as they can be stepped up from 250 to 300 feet per second in velocity without increasing the breech pressure involved. Previous to the production of progressive smokeless powders such as DuPont No. 15-1/2 and No. 17-1/2, it was impossible to do this as the old actions, such as the 1894, 1892, and 1886 Winchester and 1899 Savage, were not sufficiently strong to withstand a high initial pressure. In many cases these ballistics could be increased even more by decreasing the weight of the bullet, but this, as I have tried to explain,

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is "robbing Peter to pay Paul," and I personally would prefer the advantage of the old heavy slug to a bullet of much higher velocity which has been so decreased in length as to be almost certain of splitting up on impact in a heavy animal.

The Remington automatic has always been a favorite of mine for deer and black bear as hunted in the East and the South. Deer and bear shooting implies running shots and there is an undoubted advantage in the automatic for such a purpose. It is a splendid rifle, well balanced, simple in construction, quite accurate and powerful enough for conditions under which it would be used in this part of the country. It is particularly good in the .32 Remington and .35 Remington calibres. In comparison with it, the Winchester automatic is not worthy of consideration. The rifles themselves are unduly heavy and clumsy, while the cartridges which they use, namely, the .32, the .35, .351 and .401 are so inaccurate that they are not practical for anything but the shortest range shooting. They have extremely high trajectory and very low energy except at the muzzle.



THE AUTHOR'S SPORTING SPRINGFIELD.

A perfect type.



Upper—MANNLICHER-SCHOENAUER CARBINE 18" BARREL CALIBER 6.5 M/M. EQUIPPED WITH MIGNON.

Lower—MANNLICHER-SCHOENAUER RIFLE 24" BARREL.

Choosing the Rifle

There are some who prefer the Trombone Action Remington model '14 to the Automatic. It shoots the same cartridges and is considerably lighter and undoubtedly the slide action is fast when it works properly, but the gun is more liable to be hung up at a critical moment if anything should happen to stop it functioning. I refer to either freezing or a swollen case, either of which often occurs. It is easily seen that very little leverage can be exerted so that one's full strength can be brought to bear on a straight pull backwards as compared with the power that can be brought to bear by the powerful cam motion of a bolt action gun such as a Mauser or Springfield or even a lever action.

It will undoubtedly be noticed that I have made no mention in my list of two of the very latest bolt action weapons, namely the Ross and the Newton. The .280 Ross was a splendid rifle, powerfully constructed and of exquisite proportions. As far as the strength of its bolt was concerned, it probably was the equal of any gun made and was particularly suitable for a high velocity cartridge such as the .280 and of all the ultra high velocity, small bore cartridges, the

Sporting Firearms

.280 Ross was probably the best ever developed. The gun, however, from a mechanical point of view was not as reliable as the Springfield or Mauser type as it contained the same bad feature which applies in regard to the Remington Trombone action.

While very fast to operate when functioning properly, it is often impossible to eject a swollen shell without resting the butt on the ground and jamming the bolt handle backwards with a powerful blow from one's foot. Also the interrupted thread on the bolt head is very much more liable to jam when subjected to frost, dirt or mud than the heavy lugs of the Mauser type. The Ross Rifle Co. failed several years ago and it is extremely doubtful that the weapon will ever be produced again.

The Newton rifle had many commendable qualities. It was well designed and had a tremendously strong action, perfectly safe with cartridges developing the terrific breech pressure which the Newton loads did, and could have undoubtedly, when subjected to a few minor modifications, become a very excellent weapon. It was the first step in the right direction among American Commercial Firearms. The stock was

Choosing the Rifle

well proportioned, the weapon was beautifully balanced and had a finish superior to any on the market at that time. The bolt handle was rather unhandy as it was very small and did not stand away from the stock so that it could be readily grasped for rapid fire. The double set triggers were unnecessary on a sporting weapon and should have been eliminated. In my opinion, the velocity of the cartridges was somewhat higher than was necessary. The cartridges would have had more killing power and reliability on heavy game, had the bullet jacket been made of cupronickel rather than copper or some other tougher metal and the velocity somewhat reduced, while at the same time the weight of the bullet should have been slightly increased.

To illustrate my point—the .35 Newton would have been a very much more deadly load with a bullet weighing 270 grains traveling at 2700 ft. per second than it actually was with the 250 grain bullet traveling at 3000 ft. per second. The velocity was so high that bullets invariably broke up too quickly on impact.

This same complaint applies relatively to the .30 Newton and the .256 but the cartridges were far in advance of anything previously brought out

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here or abroad and were marvelously accurate.*

The .300 Savage or the .250-3000 are splendid cartridges for deer and black bear and in either the 1899 model or the newer 1920 bolt action type, make a delightful weapon to carry, being very light in weight, powerful, well balanced and beautifully proportioned.

It may seem absurd to recommend such high power arms as I have for woodchuck but it has been my experience that extremely accurate rifles with flat trajectory are necessary as they must generally be shot at ranges of from 75 to 200 yards and require hard hitting to stop them crawling to their holes before they die. Consequently, a high power rifle is most necessary. The .22 H.P. should be the ideal weapon for such work, but unfortunately its flat trajectory and energy were only secured with the 68 grain bullet at the cost of accuracy, so that the little weapon really has no place, being too inaccurate for small game and not powerful enough for the larger species on which it could group its shots.

Of the foreign rifles, I consider the 9.5 mm.

* Two organizations formed to make this rifle have failed; a third is now being formed. One of our most prominent munition manufacturers has just produced a new .36 Newton cartridge of 2600 ft. velocity, such as we recommend.

Choosing the Rifle

Mannlicher—the .318 Accelerated Express by Wesley-Richards and the .333 Jeffries the best for our largest game. It will be noticed that in every case where it is possible, I have eliminated the lever action. It has taken a long time to wean the American sportsmen away from the old favorite. It has always been my opinion that the tenacity with which we adhered to the lever action type was due more to the romantic glamour which surrounded the Winchester than to a sound belief that it was superior to the bolt. The lever action gun has never been superior to the bolt action. There is no logical reason why it could be. The bolt action is far stronger, will stand more hard knocks without being broken, can resist a higher breech pressure (therefore it is the only type that we use for the highest velocity cartridges), it is easily dismantled without tools, can be readily cleaned from the breech without taking it down, it is not as liable to freeze up and if it does, it can be more quickly thawed and dried out. Lastly, it is invariably a better balanced weapon, easier to carry and its ejection is a great deal more powerful, as more leverage can be exerted against a swollen case than possibly could in the weaker lever action rifle.

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The champions of the lever gun have insisted that it can be fired much more rapidly, but this is an argument which would only appeal to the novice. The old timer knows that any repeating rifle can be operated faster than it can be shot accurately. The bolt action weapon is quite as fast a repeater as anyone could function and still hit his game.

The rifles recommended for the largest game can naturally be used satisfactorily on the smaller species—as of course they will be on almost any extended hunt, but the power is far in excess of that which is required.

MOOSE, GRIZZLY, and ALASKAN BROWN BEAR.

9.5 m/m Mannlicher-Schoenauer

.405 Winchester 1895

.35 Winchester 1895

.30 U. S. Springfield, Remington model .30, or Winchester Model 1895 (using 180 or 220 grain).

ELK, CARIBOU, MULE, DEER, GOATS and SHEEP.

.35 Winchester (model 1895)

.30 U. S. Government (180 grain bullet)

.30 Remington

.300 Savage 1920

6.5 m/m Mannlicher-Schoenauer

DEER (Whitetail).

.35 Remington Automatic

.30 U. S. Government (150 grain bullet)

.300 Savage 1920

.250-3000 Savage 1920

.32 Remington Automatic

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TURKEY, COYOTES, GESE, FOX, etc.

.25-35 Winchester or Savage or Remington Rimless

.30-30 " "

.32-20 " "

WOODCHUCK.

.25-35 Winchester or Savage

.250-3000 Savage

.30 U. S. Government (150 grain bullet)

SQUIRRELS, RABBITS, HAWKS, CROWS.

.22 N.R.A. Hollow point

.25 Stevens

.25-20 Winchester

The successful killing of big game is a peculiar thing; one in which every one must solve his personal problems, and work out his own salvation. The old hunter can offer invaluable suggestions to the beginner, but beyond that he cannot go. Personal experience is the only real teacher, and while we can state general rules which apply to some extent, almost every hunt brings out new difficulties and new conditions to be contended with.

I once asked a friend who had acquired a large experience at the expense of the dangerous game of Africa, including elephant, buffalo, rhino and lion, what he would consider the best weapon for such game. His unhesitating reply was, "The one in which you have the most confidence—for one man, nothing less than a .577 Express would

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suffice, while I firmly believe that many others would do just as well with a moderately small bore of high power in which they had implicit confidence, and with which they were not afraid of the recoil." To a great measure he was undeniably right, though I believe that the middle course would be the best, for it must not be overlooked that such confidence is often carried too far and woefully misplaced. As another African hunter told me, many of the tragic deaths caused among East African sportsmen can be directly attributed to leaving camp armed with a high velocity, small-bore rifle in search of meat in the way of an antelope, and then running on to a lion. The little Mannlicher or Mauser is a great favorite for such work on the open veldt, because of its flat trajectory, and while no suitable stopper for a lion, the sportsman is loath to lose a chance at such a prize by passing up the chance. This same friend bagged a lioness that charged from two hundred yards and died within sixteen feet of him after absorbing five .33 W.C.F. that caught her in the breast and raked her from stem to stern, "and he learned about women from her."

Because elephants have been killed with the .256 Mannlicher is no reasonable excuse for their

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general use on such game, nor should they be considered appropriate for our largest American mammals in the hands of the average inexperienced novice, or that large army of old-timers who are perfectly rotten shots on running game. One may be an expert shot and as cool as steel in the face of large game, yet he will not be able to place his shot with the nicety that he would like on most of the opportunities he will have. He should, therefore, be armed with a weapon that is reasonably sure to deliver a paralyzing or stunning blow even when the exact vital spot aimed for is missed, so that the game will be slowed up and another shot can be delivered before it disappears.

A bullet of approximately 180 grains weight with a muzzle energy of about 2700 foot pounds, is the least that should be considered, and to insure the bullet holding together when heavy bone is struck, its length must be increased as the velocity is stepped up. If the length of the bullet is not increased, or, in other words, its weight increased with the velocity, it will split down to the base when it meets great resistance in a large animal and go to pieces, without penetrating to the vitals. Too much stress has been laid upon the

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explosive effect of the extremely light high velocity bullets. The bullet of this type that strikes with a shock which is demoralizing on an animal the size of a deer naturally does not create the same stunning effect upon an animal of three or four times the deer's bulk, such as moose—unless one of the vital centers is struck.

Following the selection of the rifle, the most important point for consideration is, of course, practice with it. Target shooting is the only practice that one has before he is up against the game, and target shooting as most of us indulge in it, is of a most impractical nature. The best that can be said for it is that it is better than no practice at all. We generally shoot at our targets under the most ideal conditions, such as we would seldom experience in hunting game. We shoot at round black bull's eyes upon nice white backgrounds, at known distances, and take all the time that we wish to get settled for each shot. No better illustration of the futility of such practice can be given than an experience of my own. Having located an old bull and a cow, my guide and I camped near them on the edge of a bog for the night. Towards morning the guide heard the bull crossing the bog long before dayligh^t, and

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being afraid that he was through with the cow and starting out for the ridge, he decided to call despite the darkness, in hopes that we could hold him near us. Just as the first streak of light appeared over the tops of the spruce, the bull answered quite near us, and a moment later loomed up about eighty yards away through the heavy fog, trotting rapidly parallel to us. I hit him four out of five times, twice in the shoulder. Now, a bull moose at eighty yards is a big mark to hit; what I want to bring out is that one does not learn to hit a rapidly moving animal in the twilight before dawn, when the rear sight cannot be seen and there is a heavy fog to make matters worse, by the conservative practice that we generally get on the range.

A year before I had a running battle with a fine bull that we jumped in a swale and crippled with the first shot. To stop him from getting to a swamp from which it would have been hard to extract the carcass, I ran after him, firing as I caught a glimpse of him on the barren, from time to time. This bull was struck seven times out of nine shots and was dropped by the last shot at 150 measured yards after I had run 200 yards in the chase. One might say with cause that there

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was a good deal of shooting done to stop these two, yet I take more pride in the early teaching that made me able to keep on hitting, under such conditions, than I do in the killing of two other moose that were dropped with a single shot apiece under ideal conditions. With the whitetail deer, as every hunter knows, the task is often harder than with the moose, which are not only much larger but slower moving animals.

Too many people practice with fancy target rifles, as used to be the fad, fitted with set triggers, spirit levels, palm rests and everything else but the kitchen stove attached to them, instead of learning to shoot fast and true with a sporting rifle on moving as well as still targets. If they did they would be learning something worth while.

What one needs is practice under conditions approaching as nearly as possible those which we experience in the shooting of game, and I know of only one club where this is done. The targets should be of the color of game, uncertain in shape, partly concealed and at unknown range. Sometimes they should be moving and also we should practice running up to the firing point.

One of the reasons why sportsmen so often

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miss easy shots at standing game is that they are shaky through fear that it will run off and are subconsciously aware of their own inability to hit it if it does. Buck fever, that common ailment, is not fear of the game, but fear it will escape. When one has once killed he seldom has it again, and those that do not suffer from it at first are generally immune, because of confidence in their own ability. Some men are so constituted that they are cooler in an emergency than at other times—they can shoot with more accuracy at game than they would be liable to do at a target, which does not interest them to the same extent. Such men make the pinch hitters in a ball game, and are the successful big game hunters. They can bag game neatly with a light rifle because of their ability to place their shots. Others break down or go to pieces in a crisis, and the same weapon would be useless in their hands. The nervous, erratic sportsman needs a weapon of the greatest power to make up for his own inaccuracy when the vital parts are missed. Consequently, while the .30-06 is sufficient in the hands of one man, nothing short of a .405 will suffice for another, when moose or large bear are being hunted, but I have yet to see the advocate

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of .30-30 class of weapon that would not do better with a rifle of the power of the .30-06.

No matter what type of weapon you select, remember my African friend's advice. Confidence is one of the largest factors in the killing of big game. One gains confidence through practice and familiarity with his weapon. Don't try to flatter yourself by shooting at bull's eyes—try hard shots such as you would get at game, and when you can hit a mark a foot square at a hundred yards three out of five times in fifteen seconds after running a slow fifty yards to the firing point, you can pat yourself on the back and make up your mind that you are far better qualified to kill game than the fellow that makes ten straight on the 500-yard target. As a boy I had an opportunity to watch Colonel Roosevelt shoot at Oyster Bay, and never saw him do any brilliant work, but while not a fine shot he was a remarkably consistent one, at rough, rapid-fire shooting, and that's what counts in the woods or on the plains. Once you gain this confidence you can hit a running deer, or face a charging bear with a coolness that an elephant gun would not lend to you otherwise. Learn your weapons.

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Shoot a weapon that has a little more than the necessary power. Practice under practical conditions. Learn to judge distances, and experience will do the rest.

CHAPTER II

THE KILLING RANGE

IT would seem that there was very little remaining to be said on the subject of range and sighting, volumes having been written regarding the method of sighting, how to hold, elevation, windage and the many other minor details which are so important to the expert on the range. Yet these things, as a rule, mean but little to the hunter, partly because he does not study such matters as the "range bug" does, and partly because he feels that they really do not enter into his game. In a measure he is right; one does not have the time in the field to make an accurate estimate of the distance to the game, and to pull out a notebook to consider the windage tables and the jottings which one has made on the range, as to the minutes of elevation required, with the rifle in hand, for our particular style of holding. Even on the rifle range where we have the time to do such things in comfort, under ideal conditions, we do not hit it right the

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first time, at least we generally don't, and in game shooting there is seldom more than the one chance for a standing shot. It is perhaps a knowledge of this that discourages the hunter from bothering much about it, and it is appalling how many enthusiastic hunters going into the woods every year for some form of big game shooting, do so in a haphazard, hit-or-miss sort of way, without ever learning what they or their rifles are capable of. When they do get a long shot, they shoot a little high, or worse, they monkey with the rear sight, without knowing just what they are doing, and if they miss, they go home and call it "just darned hard luck" instead of gross ignorance, which it really is.

After all, such a man is not any worse than the "range pest" with his pet theories on big game shooting, that he has never been far enough away from Camp Perry to try out. Half the time he has gained nothing of importance from his range work that would make him more competent than the slipshod hunter, because he does not use his head and apply what he has learned. He will often coolly ask me with an air of one who is just mildly interested to know, what some brother sportsman thinks, what I would consider the

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best rifle and load to take with him to British Columbia, where one would be liable to get shots at goats and sheep at four to five hundred yards! Just a little matter like that, a hop, skip and a jump, like five hundred yards, at a great big sheep! "Hasn't he many times made a perfect run of ten shots on the twenty-inch bull's-eye of the standard target at that range?" Probably, but he has gained little that will help him in the hills, unless he realizes that shooting at a positive range of five hundred yards is one thing, and that a mistake in estimation of the actual range of the game by fifty yards is enough to cause a complete miss, when one is reaching out at that distance. Show me the man that is such a wonderful judge of distance that he can do this. Another thing, it is the well-placed shot that brings home the bacon; when the smallest front sight made will almost cover a sheep completely at 500 yards, how is one going to place his shots at that range? Hitting an old "billy" does not mean a kill by a lot, and the vital spot is pretty small. I know from experience that at 350 yards a large moose will blur into a brown mass over one's sights, and it is in consequence foolish to shoot at him; how much chance then has one of

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hitting a sheep at five hundred with any hope of dropping him? These shots have been pulled off now and then, generally by the grace of God and good fortune, but that is no reason why we should give them much consideration. Given ideal conditions, including lack of wind, perfect light, unobstructed vision, and a terrain over which one could judge his required elevation to within twenty-five yards—add to this that the shooter was holding 100% correct and squeezed off the trigger exactly right, and I will say that it can be done.

More than that, I know that it has been done in such a way and not by sheer luck, but I also say that there are a host of provisos to be considered, all of which must be handled correctly to insure success. So we don't want to lose any sleep over trying to figure out just how possible it is. Very few such chances come to a man in a lifetime, and he needs a good many of them if he is to score on one. I read not long ago an article by one of our best known riflemen in which he disagreed with another crank, who had said that the micrometer sight was a useless addition to the hunting rifle, as there was no time to use it in the field. The first party said that he had

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killed over seventy-five head of big game, and had twice brought down his quarry with a well-directed shot at over 350 yards, which would have been impossible if he had not had a micrometer sight on his weapon. In a measure they both were right, and I have not the faintest hesitancy in saying that the man who claimed the two long kills did so, and under the same good conditions would do so again, but he happened to be one of those rare exceptions of which we have a few, that has had a wealth of experience on the range and in test work, as well as an unusual amount of hunting experience. He has shot more ammunition than the average sportsman would in a dozen lives, and he is a student of every shot. His knowledge of the weapon that he was using, his estimation of distance, and his knowledge of sight adjustment, would all tend to make him a more likely candidate to pull off such a shot than anyone else that I know of. So there is no reason to think that the average hunter should consider such shooting seriously.

However, there is no necessity for doing so. It is beyond the possibility of doubt that seventy-five per cent of the big game killed in Quebec, New Brunswick, Nova Scotia, and the whole of

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the United States east of the Mississippi, is killed at about sixty yards, and of the remaining twenty-five by far the most are not over a hundred. While for the West and Northwestern Canada, if we double the distances we will be pretty nearly right. There are exceptions; once in a while one does get a shot at a deer in a clearing, or at a moose in a large barren at three hundred yards and over. (I did, that's how I know that he blurs into a brown mass at that distance, so that one could not place a shot.) But the point is, when these chances do occur, there is seldom any need of taking them without shortening the distance so as to insure success. This applies just as much in the West as it does in the East (and if you don't believe it, it would be a good thing for you to see a seasoned old Scotch deer stalker at work in the "Hielan's"). A real sportsman always appreciates that there is more to his credit in making a good stalk to within easy shooting distance, than there is in the killing of some poor brute at long range. He does not wish to take the chance of merely wounding an animal which may drag itself off, suffering the torments of the damned, that he may have the chance to go home and brag about the distance at which he killed it.

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We all take an honest pride in a successful long shot, and should keep on shooting as long as there is a cartridge left with which to stop a wounded animal that is either coming or going, but there is no excuse for taking excessively long shots except when facing starvation, and it goes without saying that at such a time the sportsman will play safe and get as close to his mark as possible. Most of our big game rifles are quite satisfactory as to accuracy within the capabilities of the average sportsman, and for those that are proficient enough to get the best out of their weapons at 800 yards or over, there are a few like those shooting the .30-06 that will give excellent results. The trouble is that those who have made fine scores at long range on the military target, but lack hunting experience, and the novice who has read of the marvelous accuracy of the modern high velocity rifle, all jump to the same conclusion, that with such a weapon they can kill at exceedingly long range.

I do not mean to imply that the rifle with a very high velocity, and a consequent flat trajectory, is not a great advantage over the low-power weapons of former days. The modern sportsman has fully 100 per cent more chance of hitting

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standing game at 300 yards, or running game at 100 yards, than his Daddy did with one of the old weapons with a slow-moving slug, that described a large arc in flight, but that does not mean that he can make kills with any degree of certainty at military range; he should be satisfied with a reasonable degree of increased distance. Despite the fact that his modern weapon will hold up, so that the nicety of judgment in estimating the distance to his mark is not as necessary as it was in the old days, it still remains true that the best of the modern weapons have their limitations, and that our ability to accurately judge range has not increased in proportion to the increased range of our weapons. The range to which the really first-class shot can attach any degree of certainty for game shooting is about 300 yards, and I am certain that it will not be increased until our trajectories become even flatter, and we get telescopes that are practical for game shooting; and despite their value for some short-range shooting they are far from being of serious value to the big game hunter today. To get the best out of his weapon the sportsman must study it seriously. To begin with, his sights must be set to group in the bull when he

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holds the front sight up into it and not as the target shooter does, holding under with a bit of white showing and the sights adjusted to group the shots in the black. The weapon if of high power should then be sighted to shoot point blank at 100 yards. Some prefer it sighted for two hundred and this is probably better for the open range in the West, but I prefer less. I have never believed that for either military or sporting shooting it was a good thing to have to make calculations both up and down the scale for other than the fixed range. If the rifle is sighted for the shortest range at which we will want to use it, it is naturally much easier to find the elevation necessary for the increased distances than it is to subtract up to 200 yards and to add from there on. My own Springfield is sighted for 100 yards, and as the rise and fall of the 180-grain bullet (which I use) is only $\frac{3}{4}$ of an inch at 100 yards and $3\frac{1}{2}$ inches at 200, I have a danger zone with it that is about 7 inches in diameter up to 250 yards without sight adjustment, and this is as far as I will ever want to use it in the East, and is quite small enough, allowing for errors in aim on an animal as small as a deer.

This is the real advantage in the modern



A SPLENDID MOOSE KILLED BY THE AUTHOR WITH THE SPORTING SPRINGFIELD, AT 225 YARDS.



TYPE OF GAME GUN BY JAMES PURDEY & SONS.

The world's standard of perfection.

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weapon for the novice who has had very little experience in sight adjustment. His bullet will not rise or fall outside of the killing area on his game at the ranges he is capable of hitting it, despite his errors in calculation of distance, providing he will leave his sights alone and not try shots at longer range. Whether one has his rifle sighted for 50, 100 or 200 yards he should target it at every fifty yards from 50 to 250, as by the groups that he gets at these ranges he will learn where to hold on game without adjusting for elevation; and he will then get much more accurate results than he would by merely trusting to its flat trajectory, that is, providing that he can correctly judge distances, and nothing will help one more to accomplish this than work on the target range. I am a firm believer in the sportsman knowing how to use his rifle effectively at the sporting ranges without sight adjustment. I believe that he will do just about as well if he knows the fall of his bullet at a given range, and if he has under or over estimated the distance and sees where the bullet strikes, as one often does, the correction can be made again by changing the allowance for the next shot. Invariably the game is moving fast after the first chance,

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and it is opportune to add that while a running deer only has to be led from 12 to 18 inches at 200 yards to insure a hit when using a rifle with 2700-foot muzzle velocity, providing that the gun is kept moving with the line of flight of the game, it nevertheless takes a lot of practice to learn to do with any degree of certainty at 100 yards. As to my meaning regarding the question of elevation—if we are shooting with a .30-06, using the .220-grain bullet, at a deer standing at about 200 yards estimated range, and we know that our bullet will fall about 5 inches from its present point-blank range, if sighted in for 50 yards, it is a simple thing, knowing the height of the average deer to hold just about at the withers so that we will hit about at the point of the shoulder which is the ideal spot.

Even though one can allow himself considerably more leeway in the estimation of range with the latest type of rifle, it is still important to judge as correctly as possible. A little study of the front sight as an impromptu range scale will be a great help estimating the range in the uncertain light in the woods, or in a hilly country, where it is always hard to judge correctly. The bead sight is always the best for game; some prefer

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a large one while others like as fine a bead as they can get, but if one will study his front sight at different ranges, he will quickly learn how big a spot the bead covers at 100, 200 and 300 yards. Also, the height of the front sight as seen through the peep, compared to the height of game animals at different ranges will be an excellent gauge. As an illustration, we will say that the height of our front sight from the base to the tip covers 3 feet at 100 yards. If so (and this is about what the front sight on the average rifle will do), it would be apparently the same height as a deer to the shoulder at that distance. Consequently, if the deer appeared to be half the height of the front sight it would be approximately 200 yards away. This can be worked out with an empty rifle very satisfactorily by aiming at objects at a distance, and then measuring them and the distance to them from where the sight was taken. I know of nothing more instructive to the sportsman than to get off on a hill and take sight at sheep scattered out in a pasture at various ranges. It is surprising how small even mild "old mooly" the cow will look over one's sight at 400 to 500 yards, and it will go a long way towards discouraging the errone-

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ous impression as to the practicability of killing game at those ranges if we check up to see how far out we were as to range on the small mark she affords. When some mighty hunter tells you of the wonderful shot that he made at long range, discount it by at least a third and lay the error to enthusiasm. If you think that he was sincere, and if convinced that he did do it, attribute it mostly to dumb luck. Remember that it is very unlikely that he ever measured it accurately, but at any rate don't worry over-much about trying to duplicate it.

CHAPTER III

CHOOSING THE PISTOL

THE word pistol is, of course, used in its broadest sense covering single shot pistols, revolvers and automatics. They may be properly divided into five classes: pocket and home defense guns; target pistols; meat-getters for the camper; man-killers for offensive and defensive uses; and, lastly, general purpose weapons.

There is a broad field of choice in all five classes, and it cannot be gone into thoroughly in the space of one short article; consequently, I will only attempt to give my personal choice, backed by some logical reasons gained in the school of experience. It should be borne in mind that the gun that suits any individual's fancy the best is the one for him to use. He has confidence in it and will therefore attain better results with it.

As a pocket or home defense pistol no better choice can be made than a .32 or .380 Colt, Remington or Savage Automatic; or the .35 Smith & Wesson Automatic. They are safe, reliable

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and more suitable for the pocket than a double action revolver, as they are less bulky and easier to draw without fear of catching in the clothing. And they are more accurate for rapid fire. No one can operate a pocket revolver as a self-cocker and be sure of hitting anything a few feet away without a great deal of practice.

Usually such a weapon spends most of its time reposing in a bureau drawer at home, and it should be such a gun as your wife could depend upon in your absence and use with safety to herself. Here again the automatic is the proper weapon, for the average woman, with her small hand, cannot cock the hammer of a double-action revolver unless she uses both hands and runs the risk of having the hammer slip under her thumb with the possibility of driving a bullet through her foot; and, of course, she cannot operate it as a double-action weapon accurately any more than a man could.

The recoil spring of an automatic is also too strong for a woman to pull back to feed the first cartridge from the clip into the chamber. So the best plan is to keep the pistol in a safe, handy place with a cartridge in the chamber and the safety on. But first make her fully fa-

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miliar with the pistol, impress it upon her that the gun is ready to fire the moment she turns the safety off, and make her practice with the gun empty, pushing down the safety and squeezing the trigger, until she knows it thoroughly. It is then the best gun for her to have around, and she will be more careful in handling it because she knows its danger.

I have no use for target revolvers or saloon pistols doctored up with special sights. It should be borne in mind that the pistol is a defensive weapon, and that some day you may want to use it seriously, and it is more profitable to learn to shoot well with a practical weapon,—particularly the one that you have decided is best suited to your needs. Nor have I much use for long range, slow-fire practice. The pistol is distinctly a short range weapon, and the man who can draw quickly from pocket or holster and hit a moving object the size of a man at any distance up to twenty-five yards, is a great deal more useful in an emergency than the man who can knock the eight inch bull out of the L target at fifty yards, taking a lot of time to rest between shots doing it.

I recommend the Smith & Wesson Model 1905 for the .38 special cartridge, or the Model 1908

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for the .44 S & W special load if a large calibred weapon is desired, and, of course, that is desirable, for one thus has an excellent general purpose arm as well. There is no more reliable gun made than the Smith & Wesson, and its fine construction and smooth pull make it the ideal target revolver. If, however, one desires to indulge in target shooting purely for target shooting's sake, there are no better guns than the .22 Colt Automatic or S & W Model 1911 .22 calibre revolver with 6 inch barrel. These guns lend themselves more to restricted districts where the range and noise must be considered.

As a meat-getter for the camper the .22 Colt Automatic is in a class by itself. It is light in weight, accurate as a one hand gun can be made; it does not make much noise, and as the ammunition is light a lot of it can be carried, and it is powerful enough to kill all such small game as one would need it for about camp, when a hollow point bullet is used.

Personally, I do not care to bother with a pistol on a hunting trip. No matter how well you shoot, and the average hunter is, to say the least, an indifferent pistol shot, you cannot do as well with it as you would with a supplementary cham-

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ber in your hunting rifle for the partridge, squirrel or duck you run across. When you carry your rifle and a supplementary chamber, you are ready for anything, without the bother and extra weight of the pistol to carry about, and a second gun to clean and care for at the end of the day. You never see the "old-timer" tote a pistol into the woods on a hunting-trip—he has learned to forego any extras that don't add to his comfort.

As a killer to knock down a dangerous man and keep him down, there is no gun on a par with the Colt Government .45 calibre automatic. This brute was designed with one idea in view, to kill and kill quickly the most dangerous game on this earth, an armed man with blood in his eyes—and for that purpose the .45 Automatic is unexcelled. It has a punch in each of its seven big slugs and the powder behind them to discourage the most determined assailant, and one does not have to hit him in a vital spot to do it—the smashing effect is demoralizing to man at least. It is reliable, simple in construction, easy to clean, readily dismantled, has little recoil, great rapidity of fire, is quick to reload, and accurate.

The old Colt's .45 and .44 single action has a similar shocking power, and is quicker to draw

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from the holster. But it is slower to load and has not the rapidity of fire, except in the hands of the "old-timer" who knows how, and it takes years of practice and costs lots of money in these days of high price ammunition to acquire the skill. The old single action still has its place but it is not as a fighting weapon; for that purpose it is passé. To begin with, the ability of the "old-timers" to shoot with them has been grossly exaggerated, and if they had our automatic arms they would have learned to shoot well in half the time it took with the old guns, and it would not have required half the practice to retain the ability to shoot fast as well as accurately. Don't believe the old worn-out stories of the natural born shots of the plains. Some men learn quicker than others and some can never learn to shoot a pistol or revolver well. But the really good ones the world over, now and in the past, practiced and practiced hard to acquire their skill, and, although they don't all admit it, if they want to keep in form they keep on practicing. In other words, to get back to the point in question, of speed and accuracy of fire combined, it took the "old-timers" years of practice to gain the same rapidity of fire with accuracy that the present

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generation can get with the automatic in a few months.

Lastly, we come to the general purpose pistol and of course there really is no such ideal obtainable, but there is one that nearly approaches it, and it is not a new invention. By general purpose gun we mean one that is good medicine to have about the house for a stray burglar; to take along on the spring fishing trip in the mountains where you might run into a cross old she-bear by accident; to carry along if you must have a belt gun to take into the big woods on your hunting trip—as a second to your rifle to shoot small game—or to help out if that wounded moose charges when your rifle is jammed (if he does, ten to one you lose anyway); to shoot at the target; and, lastly, for your Western hunt where you want a reliable belt gun that is safe to carry and use mounted. That gun is the Colt Single-action Frontier Model—for the .32-20 cartridge. This may seem contradictory after what I had to say about it before—but then I was talking of man killers for present day conditions. There is one place where the single action gun is supreme—and that is for use mounted—no double action or automatic is as safe on

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horseback as the single action. It cannot be squeezed off unless you have deliberately cocked it to fire, and after the single discharge it is as safe as before. The automatic is not until you have put the safety on, and the double action gun never is. Many valuable horses and lots of men have been accidentally killed because the horse reared and plunged as the pistol was fired, and naturally the rider instinctively grabbed for the reins with the weapon in hand, thereby firing a shot into the horse's withers or hitting a nearby companion. This cannot happen with the single action. Another advantage is its strength and simplicity of construction which makes it ideal to take out into the wild sections.

A word should be said in conclusion regarding the European one-hand weapons. It is not patriotism which prompts me to say that in this branch of gunnery America has always led the world; the best European authorities frankly extend to us the palm for revolvers and automatic pistols. The only revolver worthy of mention of foreign manufacture is the Webley and beside a Colt or a Smith & Wesson it is a clumsy misshapen thing indeed.

As one would naturally expect, because of their

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mechanical genius, the Germans came to the fore with the automatic, the best known of which are the Luger and the Mauser, but they are both very much more complicated than the Colt automatics, and are consequently more apt to get out of order when subjected to severe use. The military Mauser is so clumsy that it is out of consideration except for military purposes. And the Luger, while superbly balanced and of splendid design, is subject to the worst fault that an automatic can fall heir to, namely that it is very prone to jam.

I have shot with several pre-war Luger and Mauser automatics and they were all bad offenders in this respect, while my old .45 Colt Automatic, which I have shot thousands of times, never jammed but once and then on what I afterwards found to be a faulty primer. There is also a Mauser pocket automatic but it is far below the Colt, Savage or the Remington in operation or simplicity of construction. They one and all should be avoided by those who desire a thoroughly dependable weapon.

CHAPTER IV

MASTERING THE PISTOL

IN the previous chapter I recommended the .45 Government Automatic as the best weapon for offensive or defensive purposes. And it would logically follow that it should be the best weapon for target practice. I am laying myself open to criticism, but of what use is pistol practice anyway, aside from the recreation it affords, except to prepare us for an emergency. In adopting a hobby it is well to take up one which may be useful. It is a satisfaction to know that our time and efforts in target shooting have been expended along a line that may be invaluable to us some day. The .45 automatic is the military side arm of this country and every man of military age should know how to use it. Furthermore, the automatic is the up-to-date weapon. Most of the world's records are held with it.

I have packed the old .45 single action frontier gun on my belt. I know it is quicker on the draw, and I also know some old-timers that can get

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into action quicker and fan a six gun as fast as any one could shoot six shots from an automatic. But they took years to learn it. The gun and the man behind it is of a different era from ours. And I am convinced by my experience that the average man will learn to shoot the automatic better than he would the revolver, do it in shorter time and have a much smaller ammunition bill staring him in the face when he gets through, which in these days of high-priced ammunition is an item to be considered. The mastery of the U. S. Government pistol requires a great deal of concentrated effort, and no one can sit down and tell the beginner how to accomplish it; but the two cardinal requisites are constant practice and careful concentration of mind and body on every shot fired.

It is not meant to imply that the .45 calibre automatic is a particularly hard gun to shoot, in fact, it is, in my experience, an easier gun to teach the tyro to shoot than any other pistol or revolver of large calibre. But to become a good pistol shot is infinitely harder than to become a good rifle shot, as a comparison of the number of experts in the Army with each weapon will testify to. Given good health and eyesight, plenty

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of practice and an able instructor, the average young man will develop into, if not an expert, at least a good, capable rifle shot. Yet not one in twenty rifle experts will ever make expert pistol shots. In the first place, it requires steadier nerves, and secondly, an amount of concentration that most men seem unable to apply to the work. The most that we can do to help the beginner is to start him in proper form—as otherwise he is working with strong obstacles before him. With care and study, there are many little points that he would eventually pick up for himself—but much time is saved if they are pointed out at the start.

The following points may not suit all, but they all have the virtue of being correct. The beginner, as he progresses, may find a position that suits him better; if it meets his particular needs, by all means adopt it, for ease of position is of prime importance in pistol shooting. Assume an easy position, slightly bracing the body, but not rigidly. Firmness is essential, but rigidity will cause that fatal trembling that is ruinous to marksmanship. Stand erect, distributing the weight evenly on both feet, facing the target squarely, rather than sideways. The side posi-

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tion is assumed by many, but it is a relic of the old dueling days when it was universally adopted because the shooter then presented a much smaller mark to his opponent. It does not, however, promote steadiness, and it brings more leverage to bear on the extended arm, which is carried farther away from the body; consequently, it is more tiring to hold the heavy pistol in position. The right leg should be slightly extended, with the foot pointed directly towards the target, and not as is common—obliquely.

Some favor the fully extended arm, though many good shots—generally men who are not muscular—prefer the bent-arm position. It is better in shooting the automatic to hold the arm straight, so that the gun and the wrist are in prolongation of the forearm. The grip of this pistol was designed with this point in view, and it is much steadier raising the straight arm from the shoulder until the sights are level with the eye. Aim rather with the body than with the arm; that is, instead of moving the arm about to get the aim, hold it still and turn the body from the waist to get the desired lateral adjustment, and sway slowly backwards or forwards for elevation or deflection, as the case may be. Take

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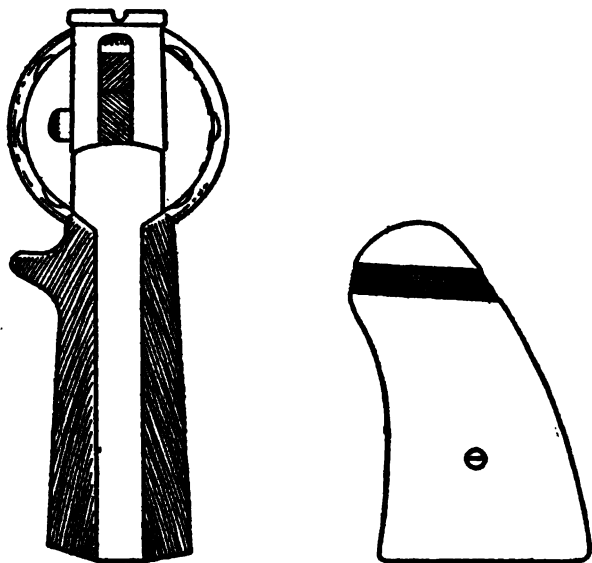
a deep breath before aiming and hold it. If you need a second breath before you have fired, lower the gun and begin over again, for you have waited too long anyway. Let the left arm hang loosely at the side, or press the palm of the hand against the left thigh for steadiness, or on the hip.

Regarding the trigger release, it should be remembered that one should never pull the trigger with the index finger, which is fatal to accuracy, but taking a good full grip of the stock, wrapping the fingers around it as far as possible, slowly squeeze the grip and trigger until the hammer is released. The long fingered man has an advantage in squeeze, as he can wrap his fingers around the large grip and still bring the second joint of the index finger to bear on the trigger, so that the pressure exerted will be directly to the rear, in line with the back strap. When the first joint bears on the trigger, the pressure is liable to deflect the aim to the right of the target. Care should be taken always to grasp the weapon in exactly the same way, as otherwise the shooting is sure to be erratic, as is also the case when the position is continually changed.

It is a good plan to carry the thumb high up and straight forward along the grip as illus-

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trated, instead of bent down. This hold meets with the approval of most good shots, and the writer has found that it will improve the beginner's score remarkably, as it gives a firm grip,



and to a great extent prevents shooting off of the target to the left, which is a common fault. A great aid in this hold is the special grip plate on the pistol in the illustration. Any one can make one easily out of a small piece of walnut or ebony. The flange on which the thumb rests need not be more than a quarter of an inch wide

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and that is not enough to interfere with the fit of the pistol in the holster; in fact, it throws the butt out from the wearer's hip, which is advantageous for a quick draw. This special grip gives a firmer feel to the gun in the hand; it makes it impossible to hold the gun in any but the right position, unless it is done deliberately, and keeps the thumb up in the proper position.

There is no better practice for either the expert or the novice than the use of a Hollifield Dotter for five minutes each day. It will show one his mistakes, and do more to perfect his trigger release than anything else. You could not have a more critical instructor.

The hardest thing to overcome is, of course, flinching, but the most flagrant cases of it can be cured. Proper concentration on the work will do this; for if the shooter's mind is absorbed by his trigger release and the sight, rather than by the explosion of the cartridge, he will not think of the latter. Allow your thought to dwell on the quick flash, explosion and jump of the gun, and I defy even an expert to keep entirely from flinching for a long series of shots. The easiest way to overcome a bad case of flinching is to shame a man out of it. Don't bother with light

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loads or a small calibred pistol with the intention of working up to the full service charge. This is a waste of time and may not accomplish its purpose. Get some one to stand beside you and load the pistol, handing it to you to shoot—sometimes with a live cartridge and then with an empty case—so that you never know which it will be next. Then try your best each time for a bull's eye, and each time trying to keep the sights lined up with the bull for a moment after the hammer has fallen. When you have flinched badly a few times, closed your eyes and jerked wildly off the target only to hear, on top of your panic, the click of the falling hammer, you will quickly pull yourself together and shoot steadier, realizing what a ridiculous figure you have made before your loader. Old hands almost always flinch some when they have not shot for a long time, but usually control it after a few shots, particularly if they follow the above-mentioned method.

Lastly, adopt a style in shooting—preferably in good form—but at least a style, and then stick to it. Always stand the same way, hold the gun in the same position and sight exactly the same way, and never fire a careless shot. Shoot each

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cartridge as if it were your last and your life depended on it, for ten shots a week carefully fired are worth a hundred careless ones; also ten shots each day are better for you than a hundred once a week. Do not forget that if you were stacked up against the proposition where you need your "Gat"—need is bad and sudden—there is no calibre made that would seem too big for the occasion, and you would not exchange a .45 for a half dozen pocket guns such as most people keep for protection.

CHAPTER V

CHOOSING THE SHOTGUN

THE most important points to be considered in the selection of a shotgun are pattern, durability, balance, and general appearance. Good pattern, or, to be more concise, an even distribution of the shot charge, is easily secured today. Occasionally one does see a gun that makes a bad, patchy pattern; but in the old days, forty years or more ago, the position was reversed. Then the good shooting gun was as much of a rarity as the poor one is today. Of course, we are talking of well-made weapons, not necessarily expensive ones, but the output of reputable manufacturers.

This is partly due to the popularity of the choke bore; the cylinder is just as hard to make so as to give a good even distribution of shot as it ever was, but few of them are now called for in comparison with the quantities of guns sold. Generally one will order a full choke and modified, or a modified and improved gun; and any

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amount of choke, however slight, as it tends to restrict the size of the killing circle, will close up to some extent what might otherwise be an irregular pattern, so that it will pass unnoticed by any but the most critical sportsman.

However, the chief reason why there is now so little likelihood of unsatisfactory shooting is the improvement in the methods of manufacture. Modern improvements in machinery, the tooling up for quantity production, and skilled mechanics specializing on certain parts, have done more for the modern American gun than any other thing that we know of can possibly do in the future to advance the foreign weapons.

In considering the question of durability one naturally first thinks of the method used to fasten or bolt the gun so that it will not shoot or wear loose in the joint. And that is where we easily surpass our overseas competitors. A loose gun is an abomination, and even the fifty-dollar American gun will stand more shooting and general hard usage than most of the highest grade of British guns built by the best makers.

Mechanically, the most successful method of fastening a gun is the rotary bolt, such as is used with variations, on the L. C. Smith, Fox and

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others; not because it attempts to minimize the wear, which is impossible when two metal surfaces are constantly grinding together, but because it takes up all wear and keeps the gun tight forever.

The only exception to this system of bolting among our best double guns is the Parker, and that weapon is made with a care and precision that place it on a par, grade for grade, with some of the best foreign guns.

English makers have in almost every case refused to use the rotary bolt, and the long frames that we have adopted, because it makes the gun somewhat harder to open and close, which is a poor excuse for not adopting a better method. Consequently, some of their guns are double under-locked by means of two under lugs and a sliding bolt, have an extension cross-bolt and Purdey side clips, and still they shoot loose, despite the fact that they invariably use lighter loads in their game guns over there than we do; while a hundred-dollar Smith or Ithaca will remain tight for a lifetime.

Either a gun must be made with a bevelled hook, bolting through the extension rib so as to take up all wear automatically, or it must be so

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carefully constructed of the best material and so perfectly fitted that there is no opportunity for free play between the parts that will allow them to wear in time.

It is easily seen that if built on the first principle, a gun can be made at a reasonable figure that will remain just as tight as the most expensive weapon, but if the latter method is adopted a durable weapon can only be secured at a high price. In consequence, the British weapons in anything but the highest grades do not begin to compare with our rougher machine-made guns in this all-important point of durability.

The machine-made gun will eventually supersede the hand-made or semi-hand-made gun even in England, as it is unquestionably superior to them in anything but the best grades. The first step in this direction is the gun just produced by the B. S. A. Guns, Limited, and it will undoubtedly make itself felt shortly.

In justice to them, however, we must admit that the British guns are generally better finished and of superior balance to our American guns, grade for grade, in all but those costing \$400.00 or more. This is natural, as their weapons are at least completed by hand in al-

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most every case and consequently have a smoothness that is lacking in any strictly machine-made article. And their method of finishing allows for a more perfect correction of the balance than is possible in an entirely machine-made article.

The British makers will build a gun to order in any way that the purchaser desires—with Anson and Dealy side locks, top lever or under lever if preferred, to cock on the breaking or the closing of the gun, with a round or square cross-bolt, dolls-head, wedge bolt, or without any extension rib fastening if so desired, with side clips, intercepting sears, and detachable locks; any style of rib, raised, matted, swamped, or flushed and plain, and goodness knows how many different kinds of single trigger and ejector mechanisms to choose from. Lastly, the gun is bored, stocked and engraved to suit the taste of the buyer. This spells individuality from start to finish and despite the sturdy quality of our product, the American manufacturers have got to learn to do likewise or they can never hope to overcome the demand for the British product by those of refined taste.

It is extremely unlikely that the present generation will ever see them sell again at the old

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prices. Shooting appears every day to become more and more the rich man's sport. Many believe that the present prices are entirely uncalled for, but we must remember that 75 per cent of the cost of production in the manufacture of firearms is labor—skilled labor of the finest kind—and the skilled laborer has become used to a scale of living in the past few years that it will be very hard indeed to get him away from. However, the sportsmen of this country are very much more fortunate than those abroad, where the cost of firearms has always been so much higher than it is here and where they are now becoming prohibitive for any one but a wealthy man.

The demand in the British Isles has always been for high-class guns. To a great extent shooting in England is limited, if not strictly speaking, to the rich man, at least to the upper strata of the middle class, and the little fellow in England, whether it is clothes, firearms or other things, invariably tries to ape those who can better afford to pay for the best than he can.

As the demands in the past have been for hand-made guns, the British manufacturer has, of course, catered to it just as our American makers have turned out great quantities of cheap guns

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to meet the demand on this side of the water, the result being that in Great Britain the cheap guns which are purchased there have to a great extent been imported from Belgium or Germany, and they are indeed all that the word cheap implies. The cheap Belgian gun made for export was at one time sold in great quantities in this country, but since the advent of really good machine-made guns, the sale has fallen off year by year, until practically the only foreign gun brought into this country is the first-grade hand-made double, built by the best British makers and supplied to the wealthy class of American sportsmen, who can afford to pay the price demanded for them, plus the duty.

Before the war, sixty guineas (\$800.00) would buy a gun by one of the best British makers, which is the last word in gun fitting and finish. Today, eighty to a hundred guineas are paid for the same gun, and second-hand guns by such masters as Purdey, Lang and others, are bringing more than they were made for, before the war. Unless one is buying a hand-made gun by one of the best makers, he is far better off with a well constructed machine-made gun than with one of the second-class or third-class hand-made

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or semi-hand-made guns of Great Britain. The arguments made by some of the British writers against the machine-made gun are that it will not stand up under the excessive strain imposed upon a gun in shooting driven birds, as the game is shot in England, that it will be poorly balanced, may not be safe, and will of necessity wear out and shoot loose in a very short time. This shows conclusively that the British writers are not at all familiar with our moderate priced American machine-made shotgun. I have shot for several years a couple of first-grade English shotguns, not because they are harder shooters than many American guns that I have owned, costing much less money, but because I appreciated the finer things in gun making which were hard to get here, but I also appreciated the stability and hard shooting qualities of the American guns. I have seen double barreled hammerless guns by two of our most popular makers, one costing \$45.00 and the other \$90.00 (before the war), which is certainly cheap, that have been shot upwards of thirty thousand rounds on salt water, using $3\frac{1}{4}$ drams of powder and $1\frac{1}{4}$ ounce of shot, and yet are as strong and tight as the day they were made, and have never been returned to the fac-

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tory for a penny's worth of repairs. With all due respect to the art of Purdey and Lang and other English makers, we can defy them to show a better record than these.

FIELD GUNS

There is a great deal of discussion at present as to what constitutes the most sporting and efficient gauge for field use, and while I have no desire to appear as a reactionary in the eyes of my readers, I must admit that personal contact with a great many sportsmen in the field has convinced me that despite the charm of the small bore, it is not as efficient an all-round game gun for the average man as the twelve bore. One of the reasons for the popularity of the twenty bore in America is that the gun makers are not in the habit of producing twelve bore guns as light and handy as those usually demanded by the European sportsmen, consequently we have been drawn to a smaller weapon to secure a lighter one.

A twelve bore weighing $6\frac{3}{4}$ pounds is just as efficient a weapon as the average unnecessarily heavy American field gun which weighs from $7\frac{1}{4}$ to $7\frac{1}{2}$ pounds. The recoil is a little bit heavier when full charges are used but I find as

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years go on that we do not expend as many cartridges in a day's shooting as we used to, and consequently recoil is not such a serious obstacle and due to the fact that we have fewer opportunities to fire shells than we used to, we naturally wish to shoot them with the best effect when we have the opportunity.

As I look back at the shooting in central New York when I was a boy and compare it with the rough shooting that is afforded there today, I notice that the shots are increasingly difficult. Even woodcock, that close lying bird, usually flushes wilder than the exceptional bird did twenty years ago. In those days, it was not an uncommon thing to flush eight to ten ruffed grouse in a single covey, most of which would get up intermittently, affording ample opportunity for the gunner to reload—while the dog pointed one bird after another.

Today the same birds will get up twenty-five to forty yards from the guns and not one in ten will lie for the point. We really need more powerful guns today than we used a few years ago. Despite this, I frequently shoot a twenty bore gun, not because I have any mistaken ideas as to its actual efficiency but because of what I

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might describe as its psychological charm. There is a pleasure in knocking down birds when you know that you are unduly handicapping yourself. Also I have a lot of guns—a twenty bore for special work including quail shooting is one thing, a twenty bore for all-round field work is another.

I know of nothing more delightful in the quail stubble, to use over good pointers, than a light handy twenty gauge gun, bored about half choke in the right barrel and full choke in the left, but this same gun would be a serious handicap in the hills of Pennsylvania, New York and New England, on woodcock and grouse, or even in some parts of the South where the quail are more apt to be found in the woods than in the stubble.

For such usage, an improved cylinder right barrel with a modified left is undeniably an advantage, but due to its wider spread the improved cylinder barrel must be about twelve bore in size to handle successfully $1\frac{1}{4}$ ounce of shot and when birds are wild, a charge of this weight is necessary to insure a pattern sufficiently thick to kill at forty yards from an open bore tube. Whereas I use a twenty bore when the occasion permits, I have never been deluded into believing

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that it is just as efficient a weapon. It is not and it never will be.

In the near future, as I suggest in Chapter VIII, it may become as powerful as our present day twelve bore and therefore become increasingly popular in the field through the same cause, but the twelve bore can also be increased in power. In my opinion, the perfect field shotgun is a light, well-balanced twelve gauge double barrel of not over $6\frac{3}{4}$ pounds in weight with 28-inch tubes, equipped with an automatic ejector, single trigger if possible and bored improved cylinder in the right barrel and about sixty per cent choke in the left.

There is nothing more absurd than for the sportsman to go forth into the field, armed with a gun that is full choke in both barrels as so many do today, be it twelve, sixteen or twenty; yet there are many men who should know better who are thus handicapping themselves from year to year; and generally the novice who is buying his first gun, and is not fortunate enough to have an experienced sportsman to advise him in his choice, is so equipped by some irresponsible and thoughtless clerk in the store where he makes his selection.

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There is nothing that will lower the old hand's estimation of the sportsman's experience more than to hear him declare what a terrible close shooting weapon his new game gun is. The experienced man as a rule has passed through the choke bore stage as a small boy outgrows his knickers. He will tell of the finish and balance of his pet; the locks, weight, and loads that he uses; he may even talk on trigger pull, but close shooting never—because it doesn't shoot close; if it did he wouldn't own it.

Sudden popularity is apt to lead to unreasonable extremes, and there has been an increased demand for choke bores from year to year until it has come to such a pass that it is a great deal easier to enter a sporting goods store and get a gun that will shoot too close than it is to secure one that will scatter too much. The best shot in the world could not do good shooting consistently on quail or woodcock in thick cover with a full choke gun, yet many who are not even passably good shots will stubbornly persist in trying to do so.

I have found that the best game shots invariably avoid the use of full choke when afield and reserve them for their proper place in the duck

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blind or at the traps. What they seek is a gun that throws its charge with the greatest evenness of pattern, and when they secure such a weapon they stick to it. This is equally true with many of our best professional pigeon shots. You will find in many cases that they prefer a slightly modified choke (65%) gun to an extremely close shooting (80%) one, provided that it consistently shoots as nearly perfect a pattern as possible.

In almost any small community that you visit you will hear of at least one gun that has a wonderful reputation for killing at long range. Whenever I have heard of such a gun and have had the opportunity, I have requested a chance to target it. And strange to say almost invariably it proves to be a cheap, poorly bored gun that gives a bad patchy pattern. Of course a gun that bunches its shot and places three or four pellets here and there is a hard killer when it hits. For if a bird is struck by four or five pellets of shot in a space that could be covered by a five cent piece, it is pretty liable to drop at almost any old range. But how often does the owner miss for every hit that he makes, and attributes it to his own poor judgment.

The craze for full choke field guns is slowly

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dying out, and the favorite in England is rapidly growing in popularity here. This is the improved cylinder. It is a cylinder-bore choke about .006 or even less, which does not alter the cylinder pattern to any perceptible degree, yet in some unknown way tends to give the desired effect of an even distribution of the load, without a ragged edge.

I do not seek to condemn the choke gun for use where it is practicable, for its many advantages cannot be denied. It is quicker, and its velocity is greater; it will kill further because of this increased velocity and closer pattern, and its penetration is better. A full choke gun will shoot No. 5 shot at 50 yards as hard as No. 6 shot is thrown from a cylinder bore at 40 yards. But the choke bore does not properly belong to field shooting, as it decreases your killing circle almost by half. At 40 yards the killing circle of the choke is 28 inches, while that of the cylinder is 40 inches. At the average distance fired at in bird shooting the game, if hit hard, is plastered with shot from a choke bore. Also the cylinder bore strings its load out further, which in some respects is an advantage in crossing shots. The man that gains a reputation as a good shot in

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the brush is not a putterer who pulls up behind his bird and draws across its line of flight until he has made what he judges to be the proper allowance. This style of shooting may do in a duck blind but it will never do for grouse or cock shooting.

The expert throws his gun to his shoulder like a flash at what he considers the proper distance ahead of the game and as the butt squarely hits the shoulder the piece is discharged. For this style of shooting the cylinder bore gun with its wide circle and longer column of shot has an advantage that no amount of skill will overcome.

I firmly believe that if a man has to choose between a full choke and a true cylinder gun for all-around shooting that the cylinder would be the most practical, as fully 75 per cent of the shots in the field are under thirty yards, and consequently the gunner would bag a larger percentage of game.

Some years ago I picked up a beautiful seven pound field gun in a sporting goods store at a very reasonable price. The gun was a beautiful weapon in every way and the mechanism was perfect. However, I hesitated, as the barrels were 30 inch and both full choke. But the price

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was half what the gun had cost and the salesman was a good one, so I fell for it, assuming that it would be all right if scatter shells were used in the brush, and it would give the added advantage of close shooting when the birds were wild; but my chief fault in bird shooting is that which most gunners suffer from, shooting too quickly, and I have never seen game so wild that a cylinder would not drop them in the hands of a fast shot.

Considerable difficulty was experienced in securing brush shells in out-of-the-way places when the supply on hand ran short. Standard loads then had to be used until brush shells could be secured, consequently in the interim the score dropped about 20 per cent and most of the game bagged was ruined. The next season, after many misgivings and wakeful nights, the right barrel was bored out to improved cylinder. The improvement was so noticeable that the following year the left barrel was also bored cylinder. Since then they have been cut down from 30 inches to 26 inches and the gun laid aside for rabbits and woodcock, on which it is a terror.

If you have been using a close shooting gun in the field and returned this season dissatisfied with your work, have your gun bored out a little

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next season and you will probably be so pleased that you will be willing to let the far-off birds get away in future and make up for it on the close ones, with the old cylinder.

The single trigger is not a new idea, and the invention cannot be rightfully ascribed to any one gun-maker, as the system was successfully applied to double-barrel pistols a century ago. There is even evidence that the idea was put to practice over two hundred years ago, as a British collector of antique arms has in his possession a double-barrel, wheel-lock gun of that date actuated by a single trigger. However the idea was never successfully worked out until about 1880. The first patent was applied for in England in 1864, and since then hundreds of them have been granted, most of which have been abandoned.

W. W. Greener made a double-barrel hammer gun operated by a single trigger in 1875; to this day he does not urge their use, as he does not consider any single trigger mechanism can be relied upon not to go wrong in use. The reason why they have not been accepted more rapidly by up-to-date sportsmen can undoubtedly be attributed to the fact that a number of gun-makers in their eagerness to place one on the market have of-

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ferred single triggers which when put to the test did not stand up, and as a result their sponsors have given them up in despair and they have all received a bad name to the rank and file of gun users.

At the same time the many advantages of the single trigger cannot be denied and in time they are sure to be more generally used. The most important of these to my mind is that there is only one best length of stock for every one. If a gun-maker was to supply us with a gun that was an inch too long or too short, any of us would think that he did not know his business, yet the shifting of the hand to operate two triggers must alter the length of the stock at least one inch. With a single trigger gun this trouble is eliminated once the proper length of stock is procured.

Also one does not have to shift the hand to fire the second barrel, which tends to induce greater speed in manipulation and accuracy as the aim is not altered so much. Another point in its favor is that it tends to do away with cut or bruised fingers, which are often the cause of so much unpleasantness when shooting a light gun that has a severe recoil, and this is a common

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cause of flinching which ruins many a good man's score. Also, there is sufficient space between the trigger and the guard if the rear position of the trigger is used to permit one to shoot with heavy gloves on in severe weather, and no matter how much one may dislike to shoot that way, it is often a blessing to be able to do so. What these advantages mean to a sportsman can only be judged after a fair trial in the field.

It is evident, however, that the single trigger in the simplest form has to accomplish the work of the human finger automatically, which necessitates the use of springs and consequently increases its liability of getting out of order, and serves to complicate what in some cases is already a far too intricate mechanism; and, as the operation depends upon recoil to function, which is an extremely uncertain quantity, there is the constant liability of a balk or a double. Nearly all single triggers are equipped with a regulator which is generally placed beside the trigger guard and which allows the use of either barrel at will. It is impossible to operate this quick enough after a bird has flushed, and as a result if the sportsman is shooting a gun bored choke and cylinder, he will often have to shoot the choke

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barrel when he wants to use the cylinder and vice-versa. Of all the patents issued for single triggers there are really but three systems upon which most of them are based, which may be called the "Three Pull System," the "Timing System" and the "Recoil Regulated System." The idea of the first of these is, that after the first barrel is discharged there is a second or involuntary pull on the part of the shooter which is caused by the recoil of the gun. When the hammer (or in a hammerless gun the tumbler) falls it releases a slide, which due to the second or involuntary pull engages the sear of the second barrel, and on the third or second voluntary pull this barrel is discharged. In shooting, of course only the first and the third pull are noticed. The weak point in this system is that some men hold their guns so tightly that the second pull is eliminated and as a result when the second conscious pull is made to fire the second barrel, the gun is balked.

The recoil system is operated by a loose piece which is independent of the gun, and when the gun is discharged it jumps back on the recoil and gets in the way of a further trigger movement until the recoil is all over. Then it swings back and brings the firing lug in contact with the sear

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of the second barrel. The fault here is that some sportsmen pull the second barrel so quickly that the loose piece has not time to function and the result is a double. It can readily be seen from this that most of the single triggers will not suit all of the sportsmen that would like to adopt them, and each one must decide for himself. Personally while I value their advantages high enough to pay the additional expense involved, and as the pursuit of feathered game often takes me far from the beaten paths, or a repair shop, I do not care to complicate the mechanism of what is now a simple action. All of the reputable manufacturers have refrained from putting out a single trigger under their names until they had one that could be fully depended upon and as a result there are very few of them offered. The only one put out by our best makers is the L. C. Smith, and beyond question it is the best on the market anywhere.

What has been said regarding the single trigger applies in a measure to the automatic ejector also, for when they first came out many manufacturers, in their eagerness to get one on the market, offered to the public auto-ejectors that would not stand up under the severe strain of

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field service, and they gained an unsavory reputation that it has taken a long time to dispel. But most of the good patents have now run out, so that the gun-maker has a host of good ones to select from and nothing to pay for their use. Consequently, almost all of the makers of fine guns supply thoroughly reliable ejectors today, and no gun should be without one as the testimony in their favor is overwhelming.

Compared with the ordinary hammerless gun the automatic ejector is superior, because it performs the total withdrawal of the empty shells from the gun quicker than the best drilled expert could possibly do it by hand. When scattered birds are rising intermittently before the gunner, or in the duck blind, particularly for shooting the cripples, the time saved by an automatic ejector is of tremendous advantage; the gun can be loaded in half the time required with a non-ejector gun. Many sportsmen who have schooled themselves can get in four shots about as quick as the ordinary shooter would with a repeater. The auto ejector was first applied to double barrel shotguns by Mr. J. Needham in England in 1874, and Mr. Needham's system still remains one of the best. Though seemingly numerous, the

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varieties of the ejector mechanisms are actually very few,—in fact, they may be divided into about two classes—those that are operated by the main spring like the Needham, and those that are operated by a separate lock situated in the forearm, of which type the Anson and Dealy is the most representative. When they are compared for strength and simplicity the great difference between the various makes is manifest. Simplicity is the first thing to be sought in an ejector and when one looks them all over he will quickly see that the only reason for the extreme complexity of those formerly in use was to get around the patents held by some other maker.

The ejector should always be made in two parts, so that each barrel operates independently of the other; otherwise when one barrel is discharged the good shell is thrown out of the gun, as well as the one that was fired; particularly is this true in a boat, as otherwise a lot of ammunition will be wasted. Many people think that an ejector is a strain on the action of a gun, but this is not so, as the shells only require a slight flip to throw them out of the chamber (which is all that the auto ejector does), for the ordinary ejector

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lifts them out of the chambers about a quarter of an inch and this loosens them if they are tight or jammed. Avoid the selection of an ejector that has many moving parts, as it increases the chance of its getting out of order. I am an enthusiastic advocate of the automatic ejector, but would not sacrifice efficiency by adopting a complicated one.

REPEATERS

There is another type of gun which we must now consider—which is the repeater. Some few years back, the increasing popularity of the repeating shotgun, and the introduction of the automatic appeared to have sounded the death knell of the old time favorite, the double-gun.

Sportsmen of the old school bemoaned the fact that the undeniable advantages of the multi-shot guns were rapidly putting the old favorite out of the running, and game protective associations sent up a howl of denunciation against the new instruments of slaughter, which it was predicted would soon exterminate the remnants of our rapidly diminishing game supply.

Sportsmen and game conservationists take a more liberal view of the "pumps," and the

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“autos” today. They realize that despite the fact that in the hands of an unscrupulous game hog they will destroy more game, what we really want is better game legislation, and more rigid enforcement of the present laws. The greatest crimes against our once abundant game supply were perpetrated in the days of the muzzle-loader, before sportsmen had been educated up to the present-day view-point regarding game protection.

The results of the enforcement of more stringent game laws in the past few years and the enforcement of them has already shown most gratifying results, and will, as it continues, more than counterbalance the improvements in modern firearms.

It is extremely unlikely that the repeater will ever be regulated from the game field as an exterminator at this late date. Most sportsmen realize that this would be a foolish reactionary movement—no one would advise returning to the muzzle-loader as a means of saving game. What they want is up-to-date game conservation and game farms to combat the improved firearms and the increasing number of sportsmen. The repeaters and automatics have come to stay, but

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they will not, as was confidently expected, eclipse the double-barrel guns.

A short time ago I was told by a former director of one of the largest gun plants in the country that they discontinued the manufacture of their line of double-guns because they had confidently believed the day of the double-gun had passed, and they consequently devoted all of their attention to the repeater and the automatic. To-day, realizing their mistake, they are seriously contemplating putting a new line of double guns on the market. Now the reason for the continued popularity of the double-gun is the undeniable lack of individuality in the pump or the automatic. The gun-crank rides his hobby hard and will never be satisfied with the humdrum, standardized, commonplace "pump." The pump guns fill the bill for the rank and file who want a gun purely and simply for the purpose of killing game, and ask no more of it. They cannot find a more serviceable, reliable, hard shooting weapon, that will stand up under all of the misuse that they subject it to, than the pump. That is what the great majority want and the pumps will continue to be sold by the tens of thousands. But you may spend five hundred dollars on its

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engraving, gold inlay, and Circassian stock, and you will still have a highly camouflaged regulation pump.

The gun-crank, the connoisseur, the discerning sportsman, call him what you will, is never to be satisfied with this. He will own a pump, but the "pet," the one that he brings out to show to his friends with a feeling of pride, will always be a double gun. In the double he has a far broader field for individuality, and can acquire an up-to-date thorough-bred among guns, refined, elegant of lines and of beautiful balance that will be a joy all of his life,—a gun that it is a pleasure to possess, that will express all of its owner's ideas of what a fine gun should be, and one that meets with the needs of all of his little peculiarities in shooting. As proof of this, notice the ever increasing popularity of the single barrel trap gun.

Almost everyone acknowledges the superiority of the single barrel gun for clay bird shooting, and no gun made shoots harder, or closer, or stands up better under the severe strain imposed upon it in trapshooting than the repeater. The question of balance does not enter into the argument because a full magazine is never used in a

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repeater on the trap stand. Consequently, the balance of the gun is not altered. Thousands of pumps are used at the traps, yet the single barrel trap gun which a few years ago was a curiosity is becoming more popular all the time. It is again a matter principally of individuality.

There is undoubtedly not sufficient cause to call either type the better, as the advantage lies not so much in the fact that one has a single barrel and the other two, but the various methods of construction adopted to acquire the best practical results in both cause a varied difference in the results attained when in use. Consequently, each has its advantages and disadvantages. These I shall endeavor to point out, and leave it to the purchaser to decide which is the best suited to his individual tastes.

Undoubtedly, a single barrel is the quickest to align, as it is easier for the eye to sight down one barrel than between two. This is the reason why they are so popular among trapshooters. I have had many pigeon shots tell me they could break from 10 to 20 per cent more birds with a single barrel gun than they could with a double, as it is easier to judge accurately the lead necessary to connect with rapidly crossing targets.

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It is hardly necessary to further consider the single barrel trap gun, for although they are considered by many to be superior for the purpose for which they are intended—trapshooting—and have all the elegance of proportion and balance of the double gun, few sportsmen would care to handicap themselves with the serious disadvantage of not having a second shot to fall back on in the field.

A point in favor of the repeater is that due to the receiver or frame which is about six inches in length, the sighting plane is much longer than on a double gun made with the same length of barrel.

Most of our best pigeon shooters are long barrels, not because of their greater killing range (which in these days of modern smokeless powder is to a great extent a fallacy), but because of the tremendous advantage in accuracy of the long sighting plane.

Many gun-makers advise their patrons not to use 26-inch barrel double guns because it is so hard to shoot accurately with them at any but very short ranges, but a repeater with 26-inch barrel has a sighting plane at least as long as a 30-inch double gun, and a repeater such as I

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used for several years, with a 32-inch barrel, had a sighting plane of 37 inches. However, such a long gun is out of the question for anything but duck or trapshooting.

One bad point in the single barrel guns is that as a rule they are extremely light in the muzzle, and the shorter the barrel, the more noticeable this is. For a man who swings rapidly or jerks his gun up quickly on the mark, this is a serious disadvantage, as it makes it very difficult for him to shoot steadily. And the extra amount of metal at the muzzle in a double makes it heavier at this point, and consequently easier to hold up on to the mark.

Sometime ago, I had the pleasure of shooting Dr. Carver's old pigeon gun which was made specially for him by W. W. Greener. Dr. Carver shot this gun in matches all over the world and his records are famous. The barrels of this gun are fully one-thirty-second of an inch thicker at the muzzle than the tubes of any other gun that I have ever handled. It certainly seemed to me to be far too muzzle heavy, but it was remarkable how steadily it could be held on a fast crossing bird.

The demand for a gun with a single sighting

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plane that will allow two shots, together with good balance and appearance, has led some of the foremost makers of England, including Boss, Westley-Richards and Grant, to produce a double barrel gun with superimposed tubes. Those weapons are commonly called "over and under" guns. The advantages claimed for them are, that the vertical joining of the barrels placed the shells in a direct line with the center of the butt-plate and the recoil is carried back on a straight line instead of giving a side thrust, as does the ordinary double gun, thus lessening the recoil. The depth of the fore-end necessary on such a gun keeps the left hand out of sight—also there is the quick single sighting plane before mentioned. However, this type of weapon presents considerable difficulty in securing a proper locking system, due to the peculiar mechanical construction, and many of them have proved weak in this respect. Consequently, they have only been made at a cost that is prohibitive to the average sportsman. I have examined many "over and under" guns and found many of them rather wanting in this and other minor details. The chief trouble has usually been in the automatic ejectors. When the barrels are

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side by side, there is an equal leverage exerted on each ejector, but when they are superimposed as in the "over and under" gun, there is very much more pressure exerted on the upper barrel than there is on the lower one. This generally tends to weaken the upper ejector and I have seen many of these guns which gave considerable trouble.

In all fairness, however, we must remember that the double guns have been going through a process of evolution for over a century, whereas the "over and under" and repeaters are comparatively new ideas which will probably in time reach as high a state of perfection as the double has.

DUCK GUNS

Of course, the repeating gun has always been favored more in America for duck shooting than for field work, and this is natural. For American duck shooting, the repeater is really the logical weapon, whether it is hand functioned or automatic. Ducks are very apt to dive when wounded and hold on to grass on the bottom or steal away and then die miserably from privation and their wounds, and every good sportsman seeks to pre-

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vent this as much as possible. Often a bird will be quickly dispatched with a third or fourth shell from a repeating gun that would get away before a double barrel gun could be reloaded.

Abroad the repeater has never been well received. There has always existed a great gulf of misunderstanding between British and American sportsmen because of the radical difference in the type of weapons which they use, which clearly shows the ignorance of the lack of similarity between our shooting conditions and those existing across the water, all of which should be taken into consideration to fairly compare the effectiveness of our weapons and theirs.

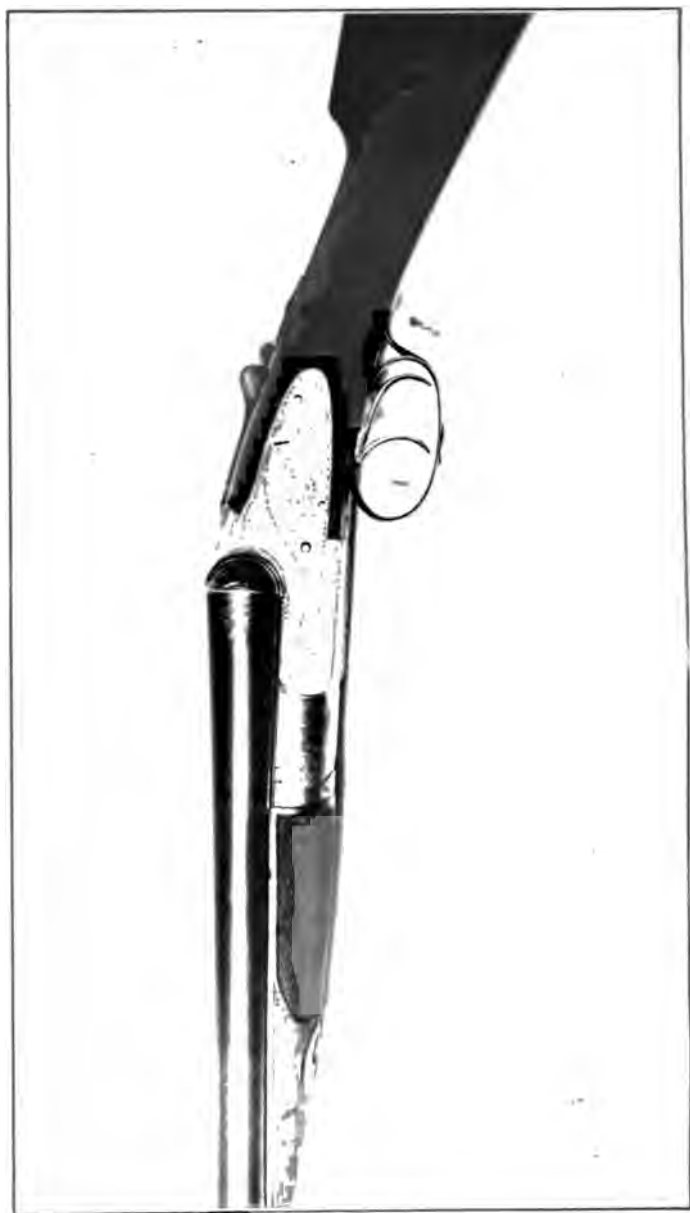
For shooting over decoys, the repeater is undoubtedly the logical weapon in this country, whereas if we wish to reach out to greater distance as we frequently do for point shooting or pass shooting where longer range and more power is desired, a 10 bore double barrel of about ten pounds weight naturally is superior.

Within the past few years, a new type of weapon has come to the fore in England, known as the Magnum, and a later development of the Magnum type is the chamberless gun. These I will describe as briefly as possible.



TWO THOROUGHBREDS.

Upper—"OVER & UNDER" BY BOSS, THE LAST WORD IN HAND-MADE GUN CONSTRUCTION (ENGLISH).
Lower—HIGH-GRADE DOUBLE BY PARKER BROS. AN EXAMPLE OF THE BEST MACHINE-MADE GUN (AMERICAN).



HIGH-GRADE L. C. SMITH DUCK GUN. AN EXAMPLE OF THE BEST AMERICAN WORK.

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The Magnum is either a 12 or a 10 bore weighing from eight to ten pounds, which shoots a special brass cartridge known as a "Perfect." These shells which are of very thin brass, tapering down to a paper edge at the crimp end, are from three to three and a quarter inches long, and naturally have a much greater capacity than the regular paper case which has thicker walls. They do not require as much wadding, as the end of the chamber is usually finished off with a square shoulder instead of a cone, or if a cone is used, it is not as deep as it would be in a paper case gun. The necessary resistance to attain the proper combustion of the charge (for which we consider a cone needed) is probably attained by the heavy shot charge, for these guns fire from four to six drams of bulk smokeless and from one and a half to two ounces of shot, according to the calibre. It naturally follows that as more shot is driven effectively from them than can be fired from a paper case gun, the pattern will be thicker plus a higher velocity and greater energy per pellet. Hence these weapons will continue to be effective at ranges where the standard paper case gun would be useless.

The chamberless gun is, as its name implies,

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without an enlarged space for the shell. The case goes into the true barrel, which has been enlarged from behind the choke down to the breech sufficiently to eradicate cone or shoulder. In other words, while the bore of a paper case 12 gauge is .729 and the bore of the chamber .800, in the chamberless gun the whole bore back of the choke is .800. Very elastic wadding is used to prevent gas leakage between the end of the case and the barrel. The advantage claimed for these guns over the already acknowledged superior Magnum is that the total absence of cone reduces the extent of shot deformation and friction within the bore.

It is claimed that the Magnum and the chamberless guns will kill at from eighty to a hundred yards, according to the weight and the size of the charge, in fact, the makers will guarantee them to do so, and while it is my opinion that the chamberless gun is built upon the right principle, I still believe that there are several flies in the jam pot.

To begin with, What constitutes a killing gun at one hundred yards? This is where a proper appreciation of the difference in our shooting conditions is worth consideration. Some authorities

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familiar with their methods have caustically criticized British duck shooting, and I believe, with some justice. It may be that no other methods would be successful over there than those practiced by the British wild fowler. I am not sufficiently familiar with their duck shooting to speak with authority. It is true that the Scottish, Irish and British coast is rugged and generally rocky, while the waters in the fall and winter are invariably rough. There are no great protected bays like those along our Atlantic seaboard so famous for the shooting that they afford on shallow and endless marshlands. Such waters as the Solent and the Norfolk Broads afford protection from the elements but in the main their shooting is confined to the mouths of small streams and unprotected headlands, where a battery could not float. Naturally, the shooting is chiefly at sea ducks and geese. Such birds as our golden eye, scooters and wedgeons are generally termed trash ducks over here. There is some shooting on inland waters for teal and mallard, but these are generally killed by flighting as they pass over and the decoy has been, as a rule, ignored. I cannot help feeling that our British cousins are grossly ignorant of the successful

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use of decoys in America, and because "it hasn't been done" in the past, so to speak, have arbitrarily overlooked their usefulness. I am convinced that despite the difference between our natural conditions and theirs, decoys, either live or wooden, could be used to considerable extent, and better sport could be had by so doing. I have killed lots of sea ducks on the Atlantic coast with an ordinary 12 bore over decoys which could not have been lured within range of a four bore without them. Failing the use of decoys the Britisher has had to be satisfied with killing such birds as he could at long range and the methods adopted are sometimes ludicrous in the extreme to our Yankee eyes. With all due respect to the hardihood of the British wild fowler, braving the bitter cold and the chances of a watery grave in an all day effort to paddle his punt within 100 yards range of an unsuspecting flock of birds, so that he can let off a two bore gun into their midst, indiscriminately killing and wounding them, I cannot in respect for what my father taught me the word implied, call it sport. Slaughter it surely is. I have read Stanley Duncan's book, and note the comment on his mighty cannon—a double barrel gun, weigh-

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ing two hundred pounds with a one and a half inch bore, shooting 32 ounces of shot to the barrel. I have heard of records of upwards of a hundred birds being bagged from a single discharge of such a gun.

Thank Saint Hubert! Such killing has not been tolerated here for half a century, and never was in the name of sport. The market hunter is almost run to earth, and the four and the eight bore gun legislated out of existence. Yet these heavy shoulder guns are commonly used abroad. You may ask what all this has to do with the effectiveness of the Magnum gun. I am coming to that now. It will be seen from the above that the Britisher is inclined to judge the effectiveness of his duck gun largely by its ability to bring to bag indiscriminately some birds out of a flock fired into at longer range by the use of larger shot. The same gun might be quite incompetent of killing with any degree of consistency single birds at a much shorter range than that from which it would take toll from a flock. Consequently, as flock shooting is frowned upon in this country, I am inclined to believe that while the Magnum gun may have considerable range over that of our best paper shell guns, it would not

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be as much in our estimation as they claim. The 10 bore Magnum that might honestly be said to have a killing range of a hundred yards by British standards might not be good for over eighty-five by ours. Nevertheless, this is a distinct improvement well worth considering.

There is another important reason why the Magnum gun would not find such favor here, which is the question of shells. Naturally the Perfect brass cases are extremely expensive, and while one does not use a great many shells in the course of a day's duck shooting by the British "bush whacking" methods, the case is entirely altered in America. It is true that one can save on this by reloading, but few of us care to go to this trouble, and the trouble is greatly increased when the number of shells required for a day's sport is so much larger as it is over here. Also as the Perfect case is not made in this country, we would have to depend upon export for our supply, which is somewhat uncertain, particularly as I understand that the British shooters have been experiencing some trouble in getting them since the war, as the best brass shells were imported from France.

The British have always been intolerant of the

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automatic so popular in this country, calling it a machine gun fit only for the pet hunter, while at the same time they use guns that have been outlawed in America for years. They decry the man who shoots a repeating gun, and consider it unpardonable to use one, while they think it nothing amiss to hurl half a pound of large shot into an unsuspecting mass of wild fowl sitting on the water. I hold no brief for the automatic gun, many of the best sporting clubs in the country prohibit its use upon their waters, and while I personally use one for wild fowl I have no patience with one that does so for upland shooting; but I must say that I consider the man that brings down five ducks out of a passing flock with as many clean, well directed shots is practicing better sportsmanship than the fellow who bags as many or more by one discharge from a miniature cannon.

The popularity of the automatic and repeating shotgun in this country is directly attributable to existing conditions, just as the swivel gun is in England. Duck shooting in this country is usually indulged in on a pass at flight birds or over decoys, on the waters where the birds are coming in to feed. In either case the shots are

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usually at small bunches, pairs, singles. The wise man, over decoys, will allow the large flocks to pass knowing that if he does they are almost sure to come back in small detachments which will afford him an opportunity to kill a good number; whereas, if he fired into the mass he would at the best get but a few of them and scare them all away for the day. Such shooting calls for a fast handling weapon, with which one can easily pick his bird. If it has the advantage of several shots, it insures better chances for despatching cripples before they can get out of range and as the shell can be fed into the magazine, between shots, one is never caught with an unloaded weapon. Added to this, shooting in America is a democratic sport, and the poor man can get in a repeater a strong reliable weapon that will outlast in serviceability any double gun that would cost twice as much in England. The British call the repeaters and automatics clumsy and ugly weapons, in which the balance is constantly changed by the number of shells in the magazine. There is a lot of truth in this; even the most hardened champion of the repeating gun will admit the superiority in feel, balance and general appearance of a well made

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double gun over the best repeater, but surely they are as a summer zephyr in comparison with some of the heavy eight and even four bore shoulder guns used abroad.

If decoys are really impractical for most of the duck shooting in the British Isles, then unquestionably their Magnums are the proper guns, and even the eight bore is to be tolerated, but I cannot condone in my own mind the use of any weapon for any purpose that cannot be fired from the shoulder.

Likewise, the repeaters must be acknowledged as the logical arms for our methods of shooting, if one's desire is to insure getting the limit with as little trouble as possible. When we need to reach out farther for them, as we do at times, then the Magnum, whether its efficiency has been exaggerated or not, would be the best choice were it not for the problem of shells, and consequently our best bet is still a ten bore of about nine pounds weight to shoot five drams of powder and an ounce and a half of shot. We can well afford to take a page from the Britishers' book in this respect just as they could from ours in regard to decoys.

CHAPTER VI

FITTING THE SHOTGUN

THERE is nothing about a shotgun that is of as much importance or that is disregarded to such a degree by the average sportsman as the fit of the stock. To the occasional discerning hunter the acquirement of a perfect fit is like Sir Galahad's search for the Holy Grail. This may not be a good simile, but it is no exaggeration to say that out of 100 sportsmen seventy-five per cent have poorly fitting guns; twenty will have fair fits, and out of the remaining five there may be one that is perfect in every respect. Exaggerated as this may seem, it is really a conservative estimate. To begin with, only a few can afford to experiment with guns until they find one that suits—and very few men can tell without the help of an expert gun-fitter, and a practical test under actual field conditions the various little adjustments that may be needed to make the gun right.

If I were about to buy a new field gun and

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were allowed my choice in only one detail of its construction, I would forget barrels, locks, weight, boring and everything else and say "Let me pick out the stock." For the most perfectly constructed gun in the world would not be as effective as a cheap pot-metal scatter-gun that cost but \$25.00 but was fitted correctly.

Yet the average city man goes into a gun-shop, throws a few guns to his shoulder, picks out one that he believes is a fit, and the salesman advises him to take, and walks off with it. While the country man goes to town and does the same thing, or worse, orders it by mail from the factory or through a local dealer.

Now, an expert who knows the exact length and drop necessary for his requirements could not do this with any degree of accuracy in ordering a new kind of a weapon because the manufacturer might use a flat hollow rib, or a raised one; he might use a thick stock or a thin one; or balance the weapon from a different point. Any one of which would make all the difference in the world to the user. No one can tell how a gun will act in the field by throwing it up on objects in a gun store, for he is bound to be self-conscious and try to point it to the best advantage.

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But in the eagerness stimulated by a shot afield he would unconsciously use the same gun differently. For this reason you will see a man go on year after year making unaccountable misses because he thoroughly believes that his ill-fitting gun fits him perfectly. Tell him that it does not and he will not believe you, because for years every time that he picked it up he tossed it to his shoulder a few times and has unconsciously adapted himself to it.

In England the greatest care is taken in properly fitting the prospective purchaser with a new gun. And the measurements are taken with as much care as a first-class tailor would show in taking the measurements for a new suit of clothes. Many of the best makers conduct shooting schools where the buyer shoots with a try gun under the observation of an expert gun fitter until the proper adjustment is secured; then his weapon is stocked accordingly.

The shooting is done at clay pigeons thrown from a tower 50 to 100 feet high to give practice at driven pheasants, and from traps concealed in fields where they are sprung without warning, to give practice at shots such as one would experience in walking up game, with dogs.

Fitting the Shotgun

In this way a gun can be fitted perfectly, the results obtained being almost impossible by fitting yourself. Your Englishman is generally very careful in everything that he does, finding that it pays well in the end; a correct stock he considers rightly a necessity.

Another cause of sportsmen falling down in their shooting is that a gun that fits perfectly this year may not fit at all well four or five years from now. As an illustration, I had a beautiful gun built to order a few years ago that was a perfect fit, and naturally I swore by the weapon and thought that nothing would ever induce me to part with it. Gradually my score in the field began to fall off after three or four years' use—and finally becoming disgusted I had a new weapon built with radical changes in the bend and the length of the stock, and immediately I was back in form. The answer to this is simple—I had lost a great deal of my former nervousness and as a result did not shoot as fast, also, I had taken on a good deal more weight, as is often the case. As a man changes both physically and mentally, the change is so gradual that he does not notice it, and in time he may be shooting a gun that he has adapted himself to

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little by little, but which does not fit him at all.

Of course, a good shot can shoot fairly well with any gun, and a novice can adapt himself to an ill fitting gun so that he can perform fairly well with it—this is the average state of affairs. But he will never do justice to himself with a gun that is not correct, and the average gun purchased is not stocked on the best principles to fit the user. For some unaccountable reason American sportsmen invariably used shotguns which were entirely too crooked for them: a few years back the average stock had a drop of from 8 to $8\frac{1}{2}$ inches. Gradually this condition has improved but in many instances the sportsmen have gone to the other extreme. The tendency towards the straighter stock at the present time is partly due to the increased popularity of trap-shooting in the past decade, and partly due to the influence of the British gun-maker who insists upon his American customer trying to shoot a weapon stocked on the British system, which is not at all suited to American game. The average stock now measures about $2\frac{1}{4}$ to $2\frac{1}{2}$ inches, which is really leaning too far in the other direction. My experience in fitting others leads me to believe that the average sportsman requires a

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drop of from $2\frac{5}{8}$ to $2\frac{7}{8}$ inches. However, too straight a stock is far better than one that is too crooked.

With a crooked stocked gun (one that is too crooked) the game has to be covered up with the muzzle if rising and going away, or if in-coming, and it is for this reason that most sportsmen call these the hardest shots when they should be the easiest. It is not meant to suggest that we should use guns as straight as those used in England. I tried that myself and am now firmly convinced that they are out of place for shooting in this country, for the man that is walking up his game cannot use as straight a stock as he could when it is being driven to him. But there is a middle ground that is the most rational.

Another disadvantage of the crooked stock is that the recoil is a great deal more severe on the shooter's shoulder as it does not come back on a straight line. Due to the bend in the stock there is a leverage on the barrels that forces the comb against the cheek; and also the recoil is more noticeable against the shoulder. The comb should be as thick as possible, as a sharp thin comb will bruise the face the most, but on the other hand, a comb that is too thin may cause the marksman

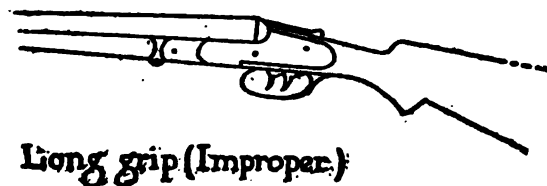
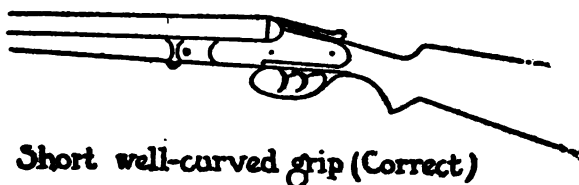
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to crossfire by sighting too far over on the gun instead of down the center of the rib.

The stock can also be "cast off" or "cast on" to bring the rib in proper alignment, but I do not believe in cast in the stock if it can possibly be avoided. One thing that I have never been able to account for is the almost universal adoption of the pistol-grip in this country. And in spite of the fact that almost all of our guns are made with them except trap-guns, there is hardly a manufacturer that turns out a properly constructed one. The so-called pistol-grip as made in this country is nothing more than a half pistol-grip, and the so-called half pistol-grip is really an abomination. If the pistol was made with a grip like its namesake which our American shotguns are afflicted with you could not hit a barn door with it at twenty paces. Invariably they are made as in sketch No. 1, entirely too long to be of any service such as they are intended for; that is to fill the hand snugly and give a firm grip and better control over the gun. For this reason a pistol-grip is an advantage on a heavy duck gun in which large charges are fired—if it is constructed properly as shown in sketch No. 2. But for the field the pistol-grip is a disadvantage as

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the hand cannot be shifted as quickly or smoothly from one trigger to the other. And instantaneous photographs show that the grip of the stock is changed in the act of firing though most of us think we can only shift the finger when we shoot the second barrel.



There is, however, a greater fault in the pistol-grip for many shooters that is not generally appreciated. That is, due to the pressure of the under side of the hand against the end of the pistol-grip there is a leverage exerted in putting the gun quickly to the shoulder that is apt to turn the gun sideways and throw the alignment of the barrels off the true horizontal plane. This

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is serious as it will deflect the charge from the intended point of aim to a considerable extent, and cause many unaccountable misses.

British sportsmen have never favored the pistol-grip, and it is fortunate that we are learning to avoid it also. For the tendency in pulling back the hand to reach the rear trigger of a pistol-grip gun is to deflect the muzzle, whereas the same operation on the straight stocked gun is to elevate the muzzle, which is advantageous.

This argument is in no way derogatory to the use of a pistol-grip on a rifle, where it is an advantage to hold the weapon as steady as possible. A pistol-grip gives a more direct pull on the trigger, and the shooting is usually more deliberate.

Of course, a perfect fit is not absolutely a necessity to all sportsmen, for they may be divided into two classes: the slow deliberate shots and the quick instinctive ones. The first mentioned class can adapt themselves to moderately well fitting guns but to the instinctive shot who shoots with both eyes open, makes a mental allowance for his game, throws the muzzle of his gun ahead and lets go when the butt hits his shoulder, to such a man a perfect fit is indispensable. Almost all

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of our best game shots are in the latter class, and if you ask one of them how he shoots or how much lead to give a bird, invariably he cannot tell you. For he does not know himself. And this is one of the secrets of their success. Their whole attention is concentrated on the game; their guns fit so perfectly that the shooting is done to some extent subconsciously without distracting their attention from the flight of the game to align the gun.

The one thing which the sportsman is the most likely to neglect is the weight of the trigger pull. Yet it is one that I have learned from personal experience is of great importance. The weight of the pull should be made to suit the temperament of the shooter—or the best results cannot be attained. If the trigger pull is noticeably light the average man will say that it is not safe, and if it is noticeably heavy, that it will balk the shooter and cause flinching or inaccuracy by making him pull off the mark. All of these comments are true as far as they go, but there are many degrees between the two extremes to suit the needs of different shooters. The trigger pull that will suit one man will in all probability be totally wrong for another, and no one can decide this

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accurately for anyone but himself, and then only by the greatest care under actual sporting conditions. The fit of the stock can be judged at any time by targeting the gun and by the use of a few clay pigeons and a hand trap, but the strength of the trigger pull required is entirely a matter of nerves and can only be properly judged under the nerve strain induced by the actual shooting of game, when it is the hardest to judge because the attention is distracted by the flushed bird. It is only the exceptional gunner who will fire at a rapidly disappearing bird that breaks cover at his feet with the same cool deliberation that he would at a clay target, and one that was so phlegmatic would probably shoot almost as well with any fairly well fitting gun, as he would see his faults in judgment that the nervous man would never be under sufficient control to observe.

As an illustration of this, I had a very fine English gun at one time that I was very proud of and considered the best fitting gun that I had ever owned. Yet, despite the fact that I could break twenty-three out of twenty-five clay birds with it (a purpose that it was never intended for), the results in the field with it were far from

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satisfactory. After shooting through two seasons with it I realized that despite the straight stock, which every one said was making me shoot high, I was shooting under rather than over the birds that I missed. After studying the matter carefully and watching my shots, I found that there was generally a very perceptible space between the muzzle of my gun and the bird at the moment of discharge, particularly on close-in shots. Clearly this was not a case for further bending of the already extremely straight stock, as on long shots where more deliberate aim was taken the results with the left barrel were satisfactory. It was a clear case of lack of nerve control, under the stress of brush shooting at unexpected close-in shots. The trigger finger did not work in unison with the eye and the pointing hand, hence the premature discharge. The pull of the right trigger was increased a quarter of a pound and the result was an immediate increase in the score, as it caused the birds to be almost covered before the trigger was released. And so a personal error that might have taken months to correct by trying to change the style of shooting was rectified. One who neglected to consider the trigger pull might have changed the drop and

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length of the stock and been more wholly at sea than before. It is seen from this that in the case of slow shots the lightening of the trigger pull will cause quicker shooting.

Generally, the quick, nervous man needs a far heavier trigger release than the slow, cool shot, and will also do better work with a heavier gun, whereas the slow shot will generally find that his shooting is speeded up with a six and a half pound gun after he has been shooting a seven or a seven and a half pound piece.

In my opinion the general belief that almost all misses are under and behind the game is a grave mistake. For I believe that there are fully as many excitable sportsmen who miss by shooting entirely too far ahead of passing game.

Another point that we frequently overlook is the balance. Any gun can be made to balance at the hinge, which is the proper point according to our best authorities. Yet, this is not bound to make it fit all comers. The most muzzle-heavy gun that I have ever seen was the old Greener with which Dr. Carver did most of his wonderful shooting. This gun was so heavy forward that it seemed as if there was a weight hanging from the

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muzzle, yet it evidently fitted him from the remarkable record that he made with it.

A muzzle-light gun can never be held as steadily on the mark under all conditions, and whether it is light or not depends considerably upon the position of the shooter's pointing hand, for if he shoots with the left hand well forward in the extended position the weight is carried back, while if the left hand grasps the gun close to the frame the weight is thrown forward on the muzzle. So, whereas some men require a muzzle-heavy gun and others a muzzle-light one, it does not follow that the gun that felt very heavy to one man would necessarily be so for another to the same degree.

Another point that is often neglected is the length of the toe on the stock. Generally the stock should be cut off straight—but on most of the guns we see the toe is considerably longer than the heel. This has a tendency to act at times in contrary ways. If the stock is too long for the shooter and his chest muscles are well developed the long toe is apt to catch and stop the butt from being brought up far enough on the shoulder and under shooting will result. On

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others the long toe will carry out its usual effect and cause the muzzle to tilt high and as a result will shoot high. This is more noticeable in the shooting of one who fires very quickly, that is, without waiting to correct his aim.

There are many other points that are more or less important to every one as the case may be. Some may think that I am going rather to extremes on the subject of fit; to those I would say that there are thousands of sportsmen whose execution in the field with some old gun that no amount of money could buy from them, draws admiration from us all. Take these old guns away from them and they are lost—their skill is gone, and they pass into the rank and file of mediocre shooters. Yet, seldom can they explain the cause themselves; they do not know, but attribute it to confidence and being used to the old favorite. But underneath it all there is some peculiarity of the gun that just coincides with the physical and temperamental peculiarities of the owner.

CHAPTER VII

THE KILLING POWER OF SHOTGUNS

THE ever increasing popularity of the twenty gauge gun for field shooting leads me to believe that a few words relative to its past history would not be amiss at the present time. Most sportsmen seem to believe that the twenty gauge fad is an entirely new idea—the outcome of improved ammunition and more powerful powders—but this is really furthest from the truth. Of course, the earliest known sporting guns were crude affairs—and large bore by necessity, as they were loaded with any bits of metal by way of substitute for dropped shot, which was unknown. But in the closing days of the eighteenth century the shotgun became really a gun as we know it and judge its qualifications today, and about that time the twenty-bore, double-barrel flintlock was extremely popular.

Most of the guns of such famous master gun-makers as Joe Manton were fourteen, sixteen and twenty gauge, and even twenty-four gauge were

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used and advocated by some sportsmen for shooting over dogs. Manton died when he was sixty-nine years of age, in 1835, and at that time was making, principally, eighteen and twenty gauge guns for his patrons. Yet, despite the fact that he was universally acknowledged to be the premier gun-maker of the world, the pendulum had begun to swing back in favor of the larger bores, and a little later we find Frank Forrester (William Herbert), about 1845, in his writings advocating the ten-bore gun for upland shooting in this country. Eights and fours were used for ducks and considered the only thing, and the old reliable fourteen was almost forgotten—and, although they were still made after the muzzle loader became obsolete it is difficult to secure cartridges for one today.

Now in our present reaction towards the small bore of bygone days we have overlooked the fourteen, sixteen and eighteen gauge in favor of the twenty, as a result of which there has been a greater call than ever before on our manufacturers for twenty-eight gauge guns, caused by the extremists who follow all radical changes. They are responsible in a great measure for all reactionary movements, and who knows but what

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our grandchildren will be using the sixteen and the forgotten fourteen and eighteen bore? And extolling its virtues, the latter bore is unlikely—but certainly the sixteen is a safe and moderate step for the average man to take.

Because we have only really advanced along certain lines—a close examination of a “best” gun by Manton or one of his contemporaries would be educating to the average American sportsman. I have had this opportunity and they leave nothing to be desired in balance, proportion and workmanship. Even in shooting against our open bore guns they will compare favorably.

The hang and detail of some of these old masterpieces that I have seen was equal to that of one of our best makes of today. Few Americans realize this because most of the muzzle loaders in existence in this country are not good examples of the early gun-maker’s art.

It is only in late years, that is when guns began to be made by machinery, that we made really good shotguns in this country in any number. In the old days high grade guns were not made here—but were imported from England, and most of the American shotguns were made by crude gunsmiths who purchased the rough

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barrels and locks in England and made the other parts themselves and put the guns together. Abroad many beautiful examples of the old gun-maker's art, in perfect preservation, may be seen in private collections. The muzzle loader reached the apex of its perfection about 1830, and it was a finished product, just as the auto-ejector, single trigger, breech loading gun of today is a perfected type. As a muzzle loader it could not be improved further.

The early breech loader, on the other hand, was a new idea, and, while the principle was recognized to be superior, the guns, in their imperfect stage, were uncertain—faulty in pattern and not nearly as strong shooters as the muzzle loaders. This was responsible for the tendency towards large bores, which gave them a chance to compete against the more powerful muzzle loaders. The large bore breech loader won out against the small bore muzzle loader, not because it shot better—because in those early days it did not—but because it was so much handier. Finally they became the perfected gun of today, and our tendency is to return to the old favorite, the small bore of a century ago. This naturally

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brings us to the question of what the relative killing power of the standard gauges is today. This subject is so broad in its scope that it is impossible to go into it in detail in the space of a short chapter. There are so many important points to be considered that before we finished reviewing the case we would have compiled a book which most people would throw down in disgust before they half finished reading. We will, therefore, only consider the problem from the practical side.

One of the chief reasons why so many sportsmen are entirely at sea as to the actual killing power of various size guns is because it is almost impossible for them to make their tests with guns that are relatively of the same dimensions in every respect but calibre. They will collect a full choke 10 gauge with 32-inch barrels—a modified and cylinder 12 gauge with 28-inch barrels, and a full and modified 20 gauge of 30-inch barrel—or some other combination of calibre—choke, weight and length of barrel that are not proportionate. In a like manner their shells will vary. They will have $3\frac{1}{2}$ drams, $1\frac{1}{4}$ ounce loads for the 10 gauge; $3\frac{1}{4}$ drams, $1\frac{1}{8}$ ounce for the 12

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gauge, and $2\frac{1}{2}$ drams, $\frac{7}{8}$ ounce for the 20 gauge, with possibly a variation in the size of shot.

This is manifestly unjust; whether we are comparing light field loads or heavy, long range ducking loads, the charges should in each case be relatively the same to the calibre of the weapon. It is idle to compare the pattern of a 3-inch, 20 gauge shell loaded with $2\frac{5}{8}$ of powder and $\frac{7}{8}$ ounce of shot fired from a full choke barrel with a $2\frac{5}{8}$ 12 gauge shell loaded with 3 drams of powder and 1 ounce of shot fired from a modified choke barrel. Yet people do so every day and then marvel about the favorable showing the twenty made. One reason is that sportsmen are advised by the sporting goods dealer to use comparatively heavier loads in their new twenties to make them compare with the old twelve, and they do so unconscious of the fact.

In this way I have heard sportsmen argue that their specially loaded 12 gauge guns were so much stronger shooters than the old tens, which they used to use. They could easily procure 12 gauge shells loaded with $3\frac{1}{2}$ drams of smokeless and $1\frac{1}{4}$ of shot from the local dealer, but they did not realize that a comparative load for the ten would

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be $4\frac{1}{2}$ drams of powder and $1\frac{1}{2}$ of shot. The dealer does not, as a rule, carry more than $3\frac{1}{2}$ dram loads for the 10 gauge in stock, and one would have to wait a considerable time to get them from the factory, with the result that one uses the lighter loads. None of our munition makers supply heavier loads for a 10 bore than $4\frac{1}{4}$ drams of powder and $1\frac{1}{4}$ ounce of shot and this is a well balanced charge—but by no means as powerful as a good 10 bore is capable of handling. If we could get 3-inch 10 bore cases loaded with $4\frac{1}{2}$ drams of powder and $1\frac{1}{2}$ ounce of shot there would be more 10 bore guns in use today. But such loads would be unsafe in cheap, poorly constructed weapons and as the munition makers must protect themselves, we must suffer—for if we do not load our own cases we cannot get the full power and range out of a 10 bore weapon.

The 10 gauge gun loaded with $4\frac{1}{2}$ drams of powder and $1\frac{1}{2}$ ounce is considerably superior in killing power at long range to the 12 gauge, loaded with $3\frac{1}{2}$ and $1\frac{1}{4}$ ounce of shot.

To begin with, it should be remembered that the basic fact underlying a fair test is that the deviation from true center of a given charge of

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shot at a given distance is practically the same, regardless of the calibre, providing that the percentage of choke in each barrel and the powder charge is the same. As an illustration the following table is shown. It should be noted that both guns are full choke.

<i>Gauge</i>	<i>Load</i>	<i>Average killing circle for 25 shots at 25 yards</i>
12 full choke	8 drams $1\frac{1}{8}$ oz.	17 inches
20 full choke	$2\frac{1}{4}$ drams $\frac{7}{8}$ oz.	20 inches

The slightly higher velocity of the 20 gauge in a measure accounts for the wider distribution, but also because a 12 bore can be choked satisfactorily up to 80%, whereas it is impossible to get good results from a 20 bore with greater than 70% choke. Working up from this we find that though the small calibre gun will give higher velocity with a given charge of powder and shot than a large bore would with the same load, the killing circle is about the same. The larger bore will, however, handle more powder and shot successfully, and if loaded in proportion to its bore will, consequently, put more shot into a 80-inch circle at 40 yards than a smaller bore, as the following tables show:

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<i>Gauge</i>	<i>Full Choke</i>	<i>Load</i>	<i>No. of Pellets to load</i>	<i>No. in 30" circle at 40 yards</i>
12	75%	11¼ oz. No. 7	374	280
12	75%	11⅛ oz. No. 7	336	252
16	75%	1 oz. No. 7	299	224
16	75%	7⁄8 oz. No. 7	262	196
20	70%	7⁄8 oz. No. 7	262	183
20	70%	¾ oz. No. 7	225	157

Consequently, as the distance is increased, the pattern will diminish in thickness and the 12 gauge will continue to give a pattern sufficiently thick to kill, due to the greater number of pellets in the load, at a distance at which the 20 with its lighter load would begin to be unreliable.

The following are the maximum charges from which the fullest benefit will be secured in the several size guns commonly used. In England (as mentioned in a previous chapter) specially constructed 10 and 12 gauge guns are built for even heavier charges, but the average gun would be overloaded and not give the best results if the charge were increased.

<i>Gauge</i>	<i>Powder</i>	<i>Charge of shot</i>	<i>Size of shot</i>	<i>Pellets to load</i>
8	6 drams	2 oz.	No. 2	176
10	4½ drams	1½ oz.	No. 3	163
12	3½ drams	1⅛ oz.	No. 4	153
20	2¾ drams	7⁄8 oz.	No. 5	147

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The size of shot given in each case is that which I have found to be the most satisfactory for long range shots at ducks in the various gauge guns mentioned. It is noteworthy that in each case the large gauge guns, if bored the same percentage of choke, will throw a greater number of pellets into a 40-inch circle at 80 yards, despite the fact that the size of shot is larger than that used in the next smaller size gun. And the larger shot will, of course, carry further and kill at greater range. With the loads given, the guns mentioned are dependable at the following ranges; the 8 at 80 yards; the 10 at 60 yards; the 12 at 50 yards; the 20 at 40 yards. It is not meant that they will not kill further, but they are not certain to at greater distances, even though the aim is correct. Most sportsmen believe that a full choke 12 is certain at 60 yards, but careful patterning will prove that this is not true. The average man overestimates the distance at which he kills his game.

For all practical purposes, it is safe to say that, loaded with the same size shot, the 20 gauge will do the same work at 85 yards that the 12 gauge will at 45 yards, and the 10 gauge will at 55 yards.

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It is not my intention to belittle the 20 gauge gun; it has its sphere and for field shooting, due to its handiness, which allows the sportsman to get on his birds quicker and, consequently, kill them closer, it will hold its own. But it has not the killing range of the large bore guns and will not supersede the 12 for general purposes and more particularly for long range shooting. It has been shown that the 20 gauge does not shoot any harder than the 12 gauge, as its spread is fully as great as that of the 12 and, consequently, the pattern must be more open at the longer ranges, due to the reduction in the charge of shot.

The old idea was, that to get a long range, hard-shooting gun, one had to have long barrels on a heavy frame to shoot large charges of powder. This is a mistake, and it seems incomprehensible that, with all the experiments made, and interest taken in the shotgun, American sportsmen should not have discovered it before.

The British sportsman recognized this fact years ago and today you will see few guns used on the other side weighing more than $7\frac{1}{4}$ pounds and sixty per cent of them will be $6\frac{3}{4}$ pounds. Some years ago there were a good many $4\frac{3}{4}$

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pound, 12 gauge guns built to shoot light 12 bore charges in England. It is by no means urged that a 12 bore should be as light as these "feather weights" were, because recoil was unpleasant from them, even if only a few shots were fired; the contention is merely that a light 12 bore ($6\frac{1}{2}$ pounds) will kill as well as a heavy one, provided it carries the same charge and load and its barrels are as long as the heavy gun tubes.

Be moderate in your selection, choose a 12 gauge weighing $6\frac{1}{2}$ to $6\frac{3}{4}$ pounds and you will have a gun that is but little if any heavier than a serviceable 20 gauge would be, and that in the hands of the average marksman would be tremendously more efficient, as it would shoot just as hard as an eight or nine pound 12 gauge would if loaded with the same charge. Mr. F. E. R. Fryer, one of the finest shots in England at driven game, uses a pair of $6\frac{1}{4}$ pound, 12 gauge guns with $1\frac{1}{8}$ ounces of shot and has been frequently seen to have three birds dead in the air at one time, having the second gun handed to him. To be sure, a 12 gauge gun weighing only $6\frac{1}{2}$ pounds has to be of the best to stand $8\frac{1}{4}$ drams of smokeless powder, for a cheap gun would soon go to pieces under the severe strain;

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but cheap, poorly constructed guns should be avoided in the first place, and need not be considered here.

If one is using a light 12 gauge, with correspondingly light loads, he might as well use a 20 gauge as he has no advantage over it; in fact on the contrary, he has less power. Many people will say that the recoil from a light twelve with heavy loads will be too severe, but a man who knows how to handle it and use the full charge in a light 12 gauge will suffer no ill effects.

The matter of handling the recoil is largely one of educating yourself to doing so properly. The amount of shot used in the shells has a great effect upon this, as the recoil from $3\frac{1}{4}$ drams of powder is much greater if $1\frac{1}{4}$ ounce of shot is used than if $1\frac{1}{8}$ ounce is used. The pattern is, of course, more open if only $1\frac{1}{8}$ ounce is used but this can be remedied by using smaller size shot, the killing power of which will be just as good, as the velocity of the load is greatly increased.

Owing to the style of holding there was no discomfort from the recoil shock, as one would expect. At first I found that the recoil of heavy ducking loads in such a light gun was a severe

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strain, especially in warm weather when lightly clad, and the birds coming in fast to the decoys. I had a recoil pad fitted to the gun but this did not relieve matters much as the shock of the recoil is delivered to the entire system, and not only to the shoulder which is bruised; for how else would shooters suffer from "gunner's headache" which is not caused, as some think, by the powder gases. To relieve myself of this strain, I developed the habit of 'shoving forward on the forehand, that is, instead of holding the gun back on the shoulder tightly with both hands I hold it firmly with the trigger hand and shove forward against the forehand with the left hand. In this way the left arm acts as a shock absorber and most of the recoil is caught in the hand.

Far from impairing the aim, once one becomes used to this style of holding, he will find that it improves the shooting, at least it did in my case, and in no other way could the gun be held so firmly. This should be of particular value to ladies and men of light weight.

The best shot at wild fowl I ever knew was using, until a couple of years ago, a heavy imported 12 gauge. Finally he purchased a high grade American field gun, full choke and weigh-

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ing only $6\frac{3}{4}$ pounds, two pounds less than the ducking gun. Taking it out on Long Island Sound one day, as an experiment, he found it killed as far and hit as far as the old "duck gun" and he has used it ever since.

In "Frank Forrester's Field Sports," edited in 1848, Herbert says, "For any person that can afford it, and would take the trouble of having different guns for every species of sport, for summer duck shooting I should recommend a gun not to exceed 26 inches for length of barrels and 12 gauge, with a weight of $6\frac{1}{2}$ pounds, only. For autumn shooting, the gun I would recommend would be $7\frac{1}{2}$ pounds weight, 30 inches of barrel, this, I believe, being the most killing proportion that can be adopted, and by all odds the best gun for general shooting."

I quote this to show the advanced ideas of the greatest expert of a departed day, at a time when choke bores and smokeless powder were not known, and the small bores were being rapidly superseded by the large bores. No better advice than this can be given today. It is admitted that the light 20 gauge guns are of little value and that to be serviceable they must weigh 6 pounds to $6\frac{1}{4}$ pounds. Why then handicap one's shoot-

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ing with the little gun when a 12 gauge, which is much more powerful, can be secured which weighs little more? Of course if, in the name of sport, one wishes to handicap his own shooting, it is quite commendable to do so, but to induce others to do likewise do not insist that the little weapon is more powerful—it is not and never can be. It is felt by many shooters that the 10 will outlive its present unpopularity as a fowling piece and come back to its own in the near future, for no matter how much the efficiency of the 20 bore and other gauges may be improved in the future—the 10 bore can be improved proportionately.

CHAPTER VIII

THE SHOTGUN OF THE FUTURE

WHILE the rifle has progressed by leaps and bounds in the past decade, we must confess that the shotgun has, by comparison, been standing still. However, just prior to the war, experts were paying more attention to shotgun ballistics than ever before, and now that they will have the time to continue their experiments, it is not hoping for too much to expect that we may have some radical improvements in that branch of gunnery in the near future. It is impossible to predict just what the guns of the coming generations will be like, but as we know what points are receiving the greatest attention it is fairly safe to hazard a guess as to which way the cat will jump.

As the improvement of the rifle was largely in the development of superior ammunition, so it must be with the shotgun. It is hard to imagine better designed or more beautifully proportioned arms than the best double guns of today; surely

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little more could be asked for in that respect. And if we carefully examine some of the best examples of the game gun produced in our forefather's day—guns made a century ago—we find that we have progressed but little in exterior appearance. There is a limit to what can be done to beautify the gun—we cannot hope to surpass perfection. Just as the last of the muzzle loaders were all that could be expected of its kind, so I believe is the high grade double of today. Where we surpassed them was in killing range, and facility of loading, and almost any improvement that seems possible in our future guns hinges upon the development of better ammunition.

It may be said that the muzzle velocity of a twelve-bore gun is approximately 1250 ft. per second with the standard loads, but we dared not make use of much higher velocities, such as we would like to, until we arrived at some way of preventing the increased pressure, disrupting the pattern and deforming a large number of the pellets in the load. With the rifle, the problem was far easier, for after developing our powders it was only necessary to produce bullets that would resist the increased strain imposed upon them. In the gun, we are dealing with a quantity

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of small projectiles which not only must be given a higher degree of resistance to the steel bore of the barrel, but they must all be controlled after they leave the muzzle, and this is harder to do when we are dealing with about three hundred projectiles instead of one, particularly as we admit that we know very little about what happens to the shot charge, either within the bore or after it leaves the muzzle.

Since the birth of the breech loader there has been nothing new of major importance, except the invention of choke boring and the repeating gun; the former increased our range 20 per cent, while the latter only increased our speed of fire. All of the other improvements, such as the single trigger and the automatic ejector, are of secondary value.

Undoubtedly, the chief hindrance to the development of longer killing range in shotguns lies in the fact that we could not increase the velocity of the shot charge beyond about 1,100 foot seconds over a range of twenty yards without spoiling the pattern by blowing it to pieces, except by increasing the choke. Some guns were already choked up to 80 per cent, which, in a twelve-bore, means that they are practically use-

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less for close shots, as they will tear the birds to pieces, and for long range work, we cannot increase the choke beyond 80 per cent mark, as the pressure upon the shot charge is so great that too much of it is deformed and the pattern shattered.

To properly understand this it must be realized that about 5 per cent of the shot charge arrives at the target simultaneously, followed very closely by about 85 per cent of the remainder, and this 40 per cent constitutes the killing part of the load, since the rest of the charge flying irregularly and with diminished velocity arrives late, lacks penetration, spreads erratically, and is to a great extent lost at the longer ranges. The chief cause of this loss of shot is due to its deformation in the bore of the gun; all of the outer layer of shot, those which bear against the hard inner surface of the barrel, are flattened out, as is a considerable share of the shot in the interior of the charge due to jamming in the cone as it leaves the case, and in the choke, and this loss of sphericity is the cause of its lack of strength due to greater air resistance in flight and loss of weight.

I recall that about ten years ago a firm in Pennsylvania advertised a method of brass lining gun

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barrels so that cylinder guns could be made full choke and large gauges could be reduced in bore. I remember that they claimed a finer pattern from such relined guns than could be produced with the best of plain steel barrels, full choked. Undoubtedly, this was due to the fact that the brass lining did not have as detrimental an effect upon the soft shot. It is also probably why we no longer hear of them, as the choke doubtless quickly wore out in the brass tube. Working from the other angle, the French have experimented with indifferent results with a copper-plated shot made of iron.

Consequently, we must develop a harder shot than our chilled shot, which will be better able to resist deformity in the bore of the gun, or we must produce a practical concentrator which will be so satisfactory that we can discard choke boring entirely. I do not believe that a concentrator will solve the problem, for I fail to see how one can be made that will burst at other than a fixed range, and unless this was close to the muzzle, the weapon would be useless for near shots, while if it did open close to the muzzle it could have no effect upon the pattern at long range. It has been suggested that we may get a sort of

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shrapnel shell that would burst only at a fixed range, but while this method is quite satisfactory for artillery-men, it would hardly serve the sportsman, who would not find his game inclined to wait until he got out his range finder and adjusted the time fuse to match.

Another improvement that has been said to make for better results at long range with heavy charges is the chamberless gun as described in Chapter V. This may be a step in the right direction. Either some one outstanding discovery will be made which will revolutionize the shotgun, or it will be a long, tedious pull uphill for a gradual improvement. Personally, I do not think that there is much fear of our laying aside our present weapons in the near future. I feel that the change will be due when it does come to a combination of developments.

As I see it, and predicted a year ago, the only thing that we can look for other than stronger shot is the development of progressive burning powders more like our best sporting rifle smokeless in that they will develop their energy by degrees in the barrel and not all at once as our dense shotgun powders do. Such a powder might well improve the pattern by deforming less of the

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shot, as it would not jam it up against the cone with as much initial force; at the same time, such a powder might in the end, or rather when it reached the muzzle, attain just as high velocity as the quick combustion powders that we now use.

This prediction appears to be coming true—a slow progressive burning shotgun powder has just been brought out by the DuPont Co. to be known as No. 98. This powder burns so slowly that the pressure is exerted throughout almost the entire length of the barrel, thereby greatly reducing the breech pressure; and as the shot is eased over the cone and through the choke—starting slowly and gaining momentum as it progresses up the tube—instead of being smashed up against the cone with high initial pressure (as it was by the old style powders), fewer of the pellets are rendered useless through deformation in the bore. This means that a larger percentage of the charge is effective and also that the shot charge can be increased in weight to give a denser pattern at long range without balling or jamming in the bore.

At the same time, as higher power can be generated without fear of a dangerous breech pres-

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sure when the same energy is exerted over 26 inches of barrel area as was formerly exerted in from four to six inches, the velocity can be considerably increased with safety as well as improved pattern.

The Western Cartridge Co. was the first to take advantage of it and are now offering twenty-bore shells loaded with $2\frac{1}{2}$ drams of No. 98 powder and a full ounce of shot. I believe the full ounce charge is really used to afford sufficient resistance for the proper combustion of the powder rather than to increase the range of the load—though it does this also. But at any rate not since we discarded the muzzle loader and black powder have we been able to safely use such heavy charges of shot in comparison to the bore of the gun and still get good patterns.

One might say that this throws out my calculations of the killing power of shotguns in Chapter VII but it must be remembered that this new powder is still in the experimental stage—few sportsmen have as yet had a chance to try it out. We were then considering guns and loads of the present, those in general use; we are now speaking of the future. It is true these new loads practically put the twenty-bore in the space for-

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merly held by the sixteen for killing power, but the improvement is bound to be adapted to all bores, and my comparison of the relative power of them still holds good.

What can be done with No. 98 powder for the twenty-bore can in the same way be done proportionately for the sixteen and the twelve-bore—so that they would still be as far ahead of the twenty in power as they now are. In fact, they are also loading twelve-bore cases with No. 98 powder and an ounce and a quarter of shot that are effective up to sixty yards and which attain a higher velocity than we previously got from the same weight of powder and $1\frac{1}{8}$ ounce of shot. Certainly they are more effective than any other shells that I have ever used from the same size gun, and though still in an experimental stage, I look for greater improvement to follow along the same line in the near future.

We might quite naturally be led to believe from this that the future guns will be small bores, as has already been the case with the rifle. Undoubtedly, there will be some reduction in bore as greater power and longer range are secured. Indeed, it seems highly probable that it will be so; but as there is already a reaction setting in against

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the ultra small bore rifle, I believe that there will also be against the small bore shotgun. If we can produce a weapon that will not deform a large percentage of its shot charge, we can get fully as efficient a load from a relatively smaller amount of shot and at the same time increase the velocity so that the smaller gun will not only kill further, but the necessary lead could be greatly diminished. It is this question of lead and also trajectory (which few think of in connection with a scatter gun) which stands in the way of killing game even at the extreme range of our present-day weapons. Nevertheless, as it now stands, there is no doubt that many sportsmen are handicapping themselves with twenty-bore guns, as they have not the skill to get the most out of them; and to say the least, cannot shoot as well with them as they could with a larger weapon. The twenty, as I have said many times, has got to be a full choke to be a killing weapon at anything over medium range, as otherwise the pattern is too thin; but if we are able to produce a twenty in which little or no shot is lost due to deformation in the bore, we may reasonably expect to be able to get better results with more open bored, small gauge guns, and in that case

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they will be more generally useful. I am personally inclined to believe that we shall wean ourselves away from the radically small bore and that the light twelve, such as is used abroad, will come back into favor to some extent. If it does, we will probably bring the much-neglected sixteen into its own to take the place for game shooting that it really deserves. For the average sportsman who is looking for a light weapon for field use, it is decidedly a more suitable weapon than the twenty.

Many will naturally think that the future gun will not be a double but an automatic. We should of course look for the automatic as the next step; it is sure to be greatly improved in balance and design and its weight decreased. It will then possess all of the advantages of the repeater magnified to a great degree. But I believe that as game decreases in plentifulness, and it is sure to do so outside of preserves, the prejudice against the automatic for field use will become stronger. A short time ago I read an article advocating a twenty-bore automatic for field shooting. It may be that such a weapon will be the gun for the future, but I cannot help hoping that it will not be so. The automatic has its

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place in the duck blind, where one may have been disappointed for several days and then get a few minutes' fast shooting when he wishes to make up for lost time. I had such an experience, when after lying in a battery all day, I had killed but six or seven birds, and just before sundown had five come in over the decoy, of which I got four with the automatic.

The market gunner is gone, and with him the greatest harm that an automatic could do. Surely a sportsman is entitled to a few more birds to fill his bag, provided he is well inside the limit that the law allows, if he can get them by the use of an automatic. It is also, undeniably, the humane gun for dispatching cripples which will often escape when a double is used, because the gun cannot be reloaded in time to shoot them again before they recover sufficiently to dive. However, there is no such excuse for an automatic gun in the field. No sportsman could desire more than two shots on upland birds, and no extras are then needed for cripples. If we were to limit the automatic to two shots, where would be its advantage over the double, except that the shooter by using one is aiming over one barrel instead of two. That is, I must confess,

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an advantage, as is demonstrated by the large number of trapshooters who use single-barrel guns at a game where extreme accuracy counts so much. Still, there is another way of answering this, that is, in the over and under guns being built abroad. At present they are only made by the best English gun-makers, who turn out solely hand-made weapons, and they are consequently extremely expensive, but there is no doubt that they can be produced by our machine methods as well as the present double gun, and at a much reduced cost.

This has brought me up to my idea of what the gun of the future will be. I may be far from right, but I believe that I am near enough to the truth to hazard a prophecy. This future gun, I imagine, is a sixteen-bore, double-ejector with a single trigger and twenty-six-inch barrels of about $6\frac{1}{2}$ pounds' weight, shooting a 2-inch or $2\frac{1}{8}$ -inch shell. It is loaded with a scant ounce of shot and a high efficiency condensed powder. This gun would have a square-shouldered chamber, or it may be chamberless, but it will attain a muzzle-velocity of at least 1500 ft. per second. I imagine this gun is a sixteen because I believe it to be the rational step from the twelve for field

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work, and the size that can be expected in the future to shoot further and stronger than our best grade twelve-bores of the present day. I believe that we will, in the near future, get twenty-five per cent greater efficiency from our guns than we are now getting; and this would mean that we could expect a sixteen to kill as regularly with a scant ounce of shot as a twelve would with $1\frac{1}{4}$. It goes without saying that this gun would, of course, be a single trigger weapon and an automatic ejector. Both of these modern innovations have passed the preliminary stages and have already demonstrated their reliability and worth, as their use makes the double gun as easy of manipulation as an automatic for two shots. I have suggested 26-inch barrels because they are handier and give the gun a better balance and because they unquestionably have just as good range as the 30-inch barrel. I suggested over and under barrels because of their superiority for quick alignment and balance; $6\frac{1}{2}$ pounds' weight because when made of good material no more is required for strength, and their improvement in ammunition will undoubtedly bring lessened recoil; short cartridges, because when loaded with a dense powder, there is no need of their being

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more than 2 to $2\frac{1}{8}$ inches in length. The only reason why large base cups are put in our present shells when loaded with dense powder is to keep them as long as the bulk powder cases. One naturally could not use a 2-inch shell in a gun with a 8-inch chamber. Not only is the pattern ruined, but the pressure on the barrel at the cone is dangerously increased when the shot abruptly smashes up against it. Consequently, as so many weapons are in use that were made for long shells, the munition makers, to avoid trouble, did not decrease the length of dense powder cases, but with an ordinary field load it will shoot just as well as in a gun with a short chamber if properly loaded. Undoubtedly this gun must use a cartridge which develops considerably higher velocity than that which we now have, and there is no doubt that our velocities will slowly increase in the future. In the last twenty years shotgun velocities have increased about 100 ft. per second, and we can surely look for a greater increase in the next decade. This increased velocity, with proper shot concentration, will undoubtedly mean higher energy, and consequently, an expert would be able to make kills with regularity up to seventy yards.

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So far I have confined my prophecies to the development of the field gun, and it would seem to follow that the long range gun for duck shooting would progress in the same direction—undoubtedly it will, but in considering the mechanical factors, we must not forget the physical ones which are quite as important.

In this respect, I must confess that I am inclined to take a less enthusiastic view of our possibilities, despite the developments which are sure to come. If we can produce a field gun of six pounds weight that will fire a light charge at high velocity, with killing effect up to seventy yards range, it would follow that super duck guns will kill at a hundred yards and over. But if they would, of what material benefit would it be? As I see it, the advantage in the predicted field gun of the future lies not so much in its increased ranges as in the lightness of the weapon as compared with guns of equal power at the present, plus lighter ammunition, freedom from recoil, the extravagant wastage in the shot charge, and higher velocity, which will cut down to some extent the factor of personal error.

These things would also apply to the improvement of the duck gun, but let us also look more

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closely into the matter of personal error. I cannot see where a range of much over seventy yards would be of any material benefit, except to add to the lining of the munition makers' pocket by increasing the number of shells which we would be tempted to expend, and as a rule uselessly. Within seventy yards our best long range guns of to-day are pretty capable weapons, in the hands of a first-class shot who is able to get the most out of them. Unfortunately, very few of us are proficient enough to do so. Therein lies the trouble, and if we are not good enough shots to kill at the extreme range of our present guns, of what material advantage will it be to increase their killing power? Not one sportsman in ten can kill with any degree of regularity at fifty yards and not one in a hundred can do so at sixty. It consequently follows that the value of a small bore (such as a twelve) capable of killing at seventy-five yards would be, to say the least, questionable, except for flock shooting, and I for one do not wish to put myself down in print as being an advocate of increasing the range of fowling pieces so that we may slam a load of shot indiscriminately into large flocks at greater range in hope of knocking down a few. We all know

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that we do so often enough now when sorely tempted.

I realize that I am laying myself open to terrific criticism in making the statement above, and already have a vision of letters from Duxberry to the Mississippi Delta informing me that I don't know what I am talking about, and offering affidavits to the effect that Mike So-and-So or Jake Whats-it can kill ducks all day long at sixty yards with his old gas pipe. I realize that every small community throughout the country has its mythical prodigy and that I am shattering an ideal. Nevertheless, I shall stick to my colors. We all have made phenomenal long shots but most of them were flukes.

The biggest obstacle to successful shots at long range is our ability to accurately judge the distance and the speed of flight of the bird and lead it accordingly. No satisfactory system has yet been devised for doing so, and none will be, because the personal factor enters into the connection to too large a degree. Even when we do kill at long range we are apt to miscalculate the distance at which the bird was struck. As an illustration, take a high crossing bird; it is impossible to gauge its altitude within several yards

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unless it is passing over tall trees that we know the exact height of, and even then, by how much did the bird top them? Suppose we hit it, how far then did it drift? For a bird killed in the air will always drift a considerable distance in the direction of its flight. If brought down on the water, the distance at which the shot was made is even harder to estimate, for added to its natural drift is the action of the wind and water which keeps it moving after hitting the surface. Except in river shooting we seldom have any range finder, such as the trees afford, and this leads to peculiarity of shooting that is worthy of mention at this time. We are all tempted on occasion to shoot at low flying birds, that are out of range but appear to be closer than they really are. The exact opposite is true of high incomers, for the bird silhouetted against the sky invariably appears to be farther away than it actually is, and it is a common thing for the old-timers to pass up a shot at such birds that are really well within killing range. A good illustration of this is to watch a flock of pigeons circling around high city buildings when the opportunity affords, mentally calculate their height and then glance at the skyscraper, counting the floors down to the ground

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from where they are flying and allowing about twelve feet for each floor—until you become used to it you will invariably find that what you thought was a good sixty yards was not more than forty.

At one time I did considerable flight shooting at ducks, on a pass where they crossed a single telegraph line, generally going under the wires when they had to “buck” the wind, and it was such days that we always picked out to shoot. The poles were set at equal distances so that by lying near one and waiting until the birds passed we had a pretty accurate idea of just how far out they were from us. Nevertheless I did not seem to get any better at it, despite the fact that we had the firing zone charted out like a battery of artillery. Differences in the changing qualities of the light in the gathering gloom at dusk made our estimation at fault; variations in the force of the wind undoubtedly had their effect upon the speed of the ducks, and though we talk a lot about our time in trapshooting, whoever heard a duck shooter express the opinion that his time was slowing up in the blind? There is no doubt, however, that the personal factor does

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play a big part in our success, or lack of it, on certain days.

Again, the range of a duck has a great deal to do with your estimation of its speed; take as an illustration two strata of clouds, such as we often notice on windy days; the low scuds tear by like race horses, while the larger cloud banks higher up appear to be traveling slowly, though we know that they are really going faster because of the increased velocity of the wind higher up. The same way with passing ducks; often a bird whose range was accurately judged is missed because its speed was under-estimated. If our birds were always crossing at an exact right angle we would learn to do fairly creditable work, but alas! the angle is ever varying and it is the foreshortening effect of their flight that so often carries them out of the pattern.

To go back to atmospheric conditions, fog or mist has a tendency to magnify the bird and make it appear closer than it really is, while at dusk they seem farther away. There are a host of other things worth mentioning that I have not the space to bring up at this time; I merely seek to make good excuses for the inability of most of

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us to consistently kill at the full range of our weapons. Many sportsmen think that they are doing so when they are not. It is natural to overestimate anything that pleases us, and who among us is so blasé that he cannot feel a twinge of pleasure when he occasionally does knock down a single at long range? His pal slaps him on the back and enthusiastically declares that "that bird wasn't a foot less than ninety yards off when you killed it! No, sir! Longest shot be-gosh that I ever saw!" And the pal finally settles the matter in the shooter's mind by announcing that he will buy that old gun for what he paid for it new and give something to boot. Maybe they are both sincere, and bless the mark, who among us would be so wanting in sympathy as to try to disillusion them? But the point is that they go home and declare the supposition to be a positive fact. Suppose they do pace off the distance, the bird might well have drifted twenty yards through the air before it struck, at an angle which would entirely hide the drift from them. And they are ready to swear that it fell straight down. And so the stories grow until we are almost forced to believe what we know cannot be.

I repeat again, for emphasis, most of us cannot

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kill ducks with any degree of certainty at the extreme range of our best guns, although most of us think that we are doing so, and the same man that will unintentionally overestimate the range of a few long kills will often attribute the misses he makes at forty-five yards to the bird being out of range, when in reality he was at fault and the gun would kill every time at that distance if he had held it correctly.

As a good illustration, how few birds are "blown" badly in field shooting by the average man, armed with a full-choke weapon, simply because they were not centered by the charge, but were caught in the outer edge of it. Most of our kills are made in this way, but at long range the outer edge of the pattern is dissipated and ineffective, and consequently, we make a great many more misses than hits.

In point or pass shooting at ducks, where one gets the longest shots, as a rule, the average bird killed is between thirty-five and forty-five, while at fifty or over, comparatively few kills are made, and at sixty nothing short of the highest degree of proficiency will give us one out of four shots as a bag filler.

It is this and nothing else that has had the psy-

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chological effect of making the twenty-bore gun so popular among a lot of sportsmen who firmly believe that they are quite as good killers as the large bores. The effective range of the average field twenty is about forty-five yards, and as most men are not much good with a shotgun beyond that range, they take it for granted or come to the conclusion, that the twelve cannot kill much farther than the twenty can. I had a special twelve-bore gun made, as I wanted it for duck shooting, and secured in it a weapon that will kill ten yards farther than any twelve-bore that I ever shot before, but I must confess that it is little better in my hands than other guns that I have used simply because I have not the skill to use it to the best advantage.

It is for that reason that I am so lacking in enthusiasm for the future possibilities of the duck gun. Not losing track of the fact that with our present skill we will be able to kill at somewhat longer range when velocities are increased so that we will not have to lead our birds as far as we now do, and also as we are sure to get patterns in which a much smaller percentage of the shot charge will be deformed and made inefficient in the barrel, I still believe that killing birds at

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seventy-five yards would be an impossible feat for most of us unless we also enlarge the bore and go back to using big charges in a ten that will give us a much wider pattern and thereby make up for our own personal deficiency. Don't forget that our twelve gauge guns are not the twelves of our grandfather's day in size of bore, for the construction at the cone and in the choke makes them nearer fourteens from the muzzle-loading standpoint, while the tens that we now shoot are really nines. Lots of the old-timers still stick to their ten-bores for ducks, and if we want to increase our range, it is my opinion that we must follow their lead.

CHAPTER IX

CONTROLLING THE SHOT PATTERN

TO begin with, I must confess that this dissertation, speaking from a literal point of view, has probably been inappropriately named, for controlling the shot pattern seems to be as far away to-day as the Philosophers' Stone. The only step of advancement made in this respect, aside from the improvement of cartridges and more uniform powders, has been in the invention, or rather the discovery, of choke boring.

This was an American discovery made in about 1860, but like many others, including the single trigger, it was perfected abroad, and Pape, a British gun-maker of Newcastle, still claims to be the original inventor, although the assertion has long since been discredited. At any rate, little was known about it until about 1875, when choke bore guns first became popular. And, like electricity, we have learned to use it and control it to some extent without really knowing much about it.

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There are many theories championed by gun experts as to why choke boring makes the shot hold together after leaving the muzzle of the gun better than it does from a cylinder bore, but none of them have ever been proved.

General Baden-Powell supports the theory that the choke retards the wads and the powder gases so that they are not blown through the shot charge, dispersing the load, and as proof offers the explanation that the wads from a cylinder bore weapon will hit the target at twenty yards, while from a choked gun they fall short.

Another popular theory is that the shot in a charge cross each other after they leave the muzzle, those on the right crossing to the left, and those on left deflecting to the right, and that at a certain distance from the muzzle beyond forty yards they cross out of the pattern, the pellets from a choked gun crossing out farther from the muzzle than those from a cylinder bore.

Still another explanation of the action of the choke on the shot charge was that offered by Mr. Charles Askins, the well-known authority, who thought that, as the choke causes greater friction between the shot and the barrel, the outer layer of pellets become fused together,

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forming a shell around the inner pellets that have not been deformed and this outer casing of flattened shot holds together for some distance after the charge leaves the gun.

Mr. Henry Sharp, the British expert, is responsible for the suggestion that as about 80 per cent of the shot charge is deformed in passing through the barrel and consequently becomes ineffective, as it strays outside of the thirty-inch circle at forty yards and lacks velocity and penetration, hence the power of our guns could be increased at least 20 per cent, by the introduction of a harder shot than that which we use at present, and he proposes a reënforced shot that would be very much harder than chilled shot and which would not lose its effectiveness through being deformed.

But if Mr. Askins' theory was correct, the Sharp theory must be set aside, for if harder shot was used it would not fuse together and a choke gun would shoot no closer than a cylinder bore. This has been proven by tests made with steel shot which gives no better pattern in a choke gun than soft shot does in a cylinder. If, however, the steel shot is copper-plated, it shoots much closer, and this seems to bear out the Askins

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theory. However, some years have elapsed since Mr. Askins expressed the idea mentioned above, and in the interim he has made exhaustive tests which have completely changed his opinion and I believe that he has now found the truth.

His theory is simply this: it is a fact that a pressure applied to one part of a fluid body is transmitted through that medium equally in all directions. Shot is to some extent fluid, that is, the pellets in a charge move freely against each other. It takes little imagination to realize that the terrific blast of the powder charge at one end and the crimp of the shell and air resistance in the barrel at the other end set up a pressure on the shot which tends to scatter it to the sides and the charge is disrupted as soon as it leaves the barrel. But if the barrel is choked, a counter-resistance is set up at the sides as the shot passes through the constricted area, which tends to equalize the pressure on all sides and the shot holds together better when released.

I do not believe that harder shot will solve the problem, except in guns which are specially choked, to a greater extent than those which we now use, and with a powder creating a much higher muzzle velocity tougher shot will stand

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the additional strain and not be deformed as easily. Undoubtedly, some radical changes in gun construction or cartridge loading must be made before we can increase the effective range of our shotguns to any great extent beyond the present standards.

Certainly concentrators, which have never proved popular up to date, cannot do the trick. The trouble with the concentrator, which is nothing but a simplified shrapnel shell, is that it will only break at a given distance, and when a shot is fired inside of that range, as so frequently happens, one is practically shooting a ball cartridge at a passing bird.

I do not wish to go into a lengthy dissertation on the subject of loads, but to advance a few ideas on the control of the pattern in so far as it is within our means to do so. Due to variations in construction, length of barrel and so forth, guns will shoot better with different loads, some will do best with a quick-burning dense powder, while others will do better with slow-burning bulk powder, some with one size of shot and others with a smaller or larger size, or a lighter or heavier charge of it. One can never tell just what two guns by the same maker will do, consequently

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every new weapon should be tried with different loads until the most suitable one is found, and then never changed. But there are times when we are on a quail shooting trip when an opportunity presents itself for a day with the wild fowl and we have nothing but a bird gun to shoot, and no chance of borrowing one, or we will be caught with a full choke duck gun and want to put in a day with Bob White in the stubble, when a knowledge of how we may get the best out of the gun in hand is of considerable value. For instance, the length of the chamber is an important factor in the wadding of the shells; long-chambered guns will never give the best results with short cases, as the pattern is almost sure to be patchy. Consequently, if a gun is bored with three-inch chambers capable of firing heavy charges, when light field loads are used, the best results will only be obtained by using the same length of shells and filling up the extra space with wads; however, one will not mind a slight inferiority of pattern as most of the shots in the field will be short and it will never be noticed; in fact, a thinner pattern will be welcome. But if a fairly light open-bored gun is to be used temporarily for ducks the common mistake is to over-

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load it to gain power; excessive charges cannot be used with comfort in a very light gun, but the worst of it is that a heavy charge of powder in an open-bored weapon will blow the already thin pattern all to pieces, and much better results would be secured with three drams of powder and one and one-eighth of shot than could possibly be gained in an open gun with a heavier charge.

I have on one or two occasions used an open bird gun for ducks and had very good results from a two and three-quarter dram load and one and one-sixteenth of "fives"; the load was somewhat slow, to be sure, and greater leads had to be made, but the pattern remained dependable.

I have spent a great deal of time experimenting with charges for duck shooting on salt water, where long shots are the rule rather than the exception, so that an extremely hard-hitting load was required. As before said, it is not sufficient merely to put more powder in the shell, for if not properly balanced the load will be of no account. Large charges of powder and light loads of shot, or what are known as "express loads," cannot be used successfully except in guns that are choked to the fullest extent, and also with long

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chambers to allow for ample wadding. If the shells are too long for the chambers the strain on the gun is greatly increased, and the pattern ruined. The following load was finally arrived at and found to be the best for my particular weapon—a three-inch shell loaded with $8\frac{1}{2}$ drams of bulk smokeless powder, either Shultz or E. C. covered with a nitro card wad, two $\frac{3}{8}$ white felt wads, and a thin card wad on top to prevent the shot from sticking into the soft felt, and $1\frac{1}{8}$ ounce of Tatum's No. 5 chilled shot. I have also used $8\frac{3}{4}$ drams of powder and a full ounce and a quarter of shot, but the gun in which these loads were used was a specially built one. Of course shells loaded with $8\frac{1}{2}$ drams and $1\frac{1}{4}$ of shot can be used instead of the $1\frac{1}{8}$ charge, but I believe that more is gained with the lighter load of shot, as it is considerably faster, and the penetration is greater in proportion. Also as No. 5 shot is used instead of the popular No. 4, the pattern is thicker, due to the greater number of pellets in the load.

Most sportsmen make the mistake of using too large a size of shot, such as threes or fours, for salt water shooting and thus decrease the density of their pattern; this is all wrong, for if they

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would increase the powder charge instead (when using full-choked guns) they would get a much more killing pattern at long range from the smaller shot, thereby hitting their birds with a larger number of pellets, striking with higher velocity and more penetration, and consequently, delivering more shock. It is the shot that strike in the head, neck, and wings that bag the game and there is infinitely more chance of doing this with the more numerous small pellets.

I know from experience that I can kill more game with fives or sixes, propelled by a good stiff load of powder, than I can ever expect to kill with fours in a twelve-bore gun, unless it is one of the Magnums such as are made in England for perfect cases, which shoot a ten-bore load and an ounce and a half of shot (fours). Such a weapon is said to be good for up to eighty yards with certainty.

To go back to the other side of the shot-control question, it is an easy thing to spread the shot, when so desired, by the use of spreader loads.

At what date spreaders were first used, I have been unable to determine, but it was undoubtedly after the choke-bore gun became popular. An old sportsman of long and varied experience, to

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whom I spoke on the subject, claimed to have made experiments with scatterloads twenty-five or thirty years ago.

One of the earliest forms of spreaders was made by putting a spiral piece of wire in the shell with the shot. When the shell was discharged the coil of wire, being heavier than the individual pellets in the load, had greater velocity, and passed through the charge of shot, thereby scattering it. Naturally the pattern derived from such a load was extremely uncertain and the method never gained much popularity.

On the same theory many gunners loaded their shells with a layer of heavy shot, No. 2's or B-B's behind the fine shot. The velocity of the heavy shot being greater, due to greater weight, they passed through the finer shot in front, and scattered it. With this load, also, the pattern was inclined to be patchy. But it had the added attraction of enabling the sportsman to occasionally kill at extremely long range by means of one of the heavy pellets luckily hitting the game.

About twenty years ago, one of the large ammunition manufacturers made a shell which they called a "15-yard load." The idea was to place a vented or perforated wad over the powder,

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which allowed some of the gases generated by the combustion of the powder to pass through the shot, thereby scattering it. As the power of the load was so weakened by the leakage of the gases, the load was certainly not good for a longer range than that for which it was advertised, and it is a question in the writer's mind whether it deserved that reputation or not. The best that could be said for it was that its pattern was considerably better than that derived from the wire spreader.

There are only two methods for scattering shot worthy of mention, and they are used today by our ammunition makers. One is by inserting a spreader in the shot charge which is made out of two dovetailed pieces of cardboard which just fit the inside circumference of the shell. The spreader is shoved down into the shell in such a way that the charge of shot is divided into four equal sections. As the charge leaves the muzzle of the gun it flares off from the spreader in the center. The shell is very satisfactory and gives a good even distribution of shot as a rule. The only fault with it is that occasionally the spreader will get side-ways as it passes from the barrel, due to not being seated straight in the shell when

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loaded, and as a result will make a hole in the pattern. This may occur on the side or directly in the center of the load and will cut out about a quarter of the effective part of the pattern.

For the above reason the writer prefers the last style (mentioned below) as it is undoubtedly the simplest and most perfect theoretically. In this shell the loading is done as usual excepting that the shot charge is divided into three sections with a thin card wad between each one. The last section, or the one nearest the wads over the powder, is about half again as large as the first two. As the last section of the shot is heavier than the preceding two, and leaves the barrel later when the combustion of powder has reached its greatest strength, it has a much higher velocity. As a result it catches up to the first two sections, and bursts through, scattering the preceding shot as the spreaders do; but as the result is attained without the aid of foreign matter in the shot there is far less chance of faulty pattern.

Any scatter shell tends to string the shot and cause a patchy pattern, which is not to be desired. The velocity and penetration, however, are just about the same in the regularly loaded

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shells, and they will give good satisfaction up to twenty-five or thirty yards. Beyond this distance they spread too much to be practical, though kills can frequently be made at a longer distance.

For use in full-choke or half-choke guns for woodcock or grouse shooting, where most of the shots are in thick cover, or for snipe and quail shooting early in the season, when the birds are not wild, the writer heartily recommends the use of scatterloads, as they not only increase the sportsman's chances, but prevent the useless mutilation of the game.

CHAPTER X

THE IDEAL BATTERY FOR NORTH AMERICA

THROUGH choice or of necessity sportsmen limit their arsenals to two or three favorite weapons, the selection of which is governed by their pocket books and the game which they most enjoy to pursue. Big batteries are rare in America and those who possess them are limited, generally speaking, to the wealthy all-around sportsmen who are attracted by both fur and feathers, and the gun crank class who, whether they can afford a large collection or not, generally have one which, by the way, is as often as not an inharmonious assortment that is far from practical.

A collection is one thing, a perfect battery for practical purposes is another, and the latter is not and cannot in the nature of things be large. The explorer, trapper, or professional hunter of big game in America usually limits his armament to one rifle; from a practical point of view that is all that he needs, and he should be prac-

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tical; where one hunts heavy game he has little use for a shotgun, while the man that only hunts in the settled districts for rabbits and birds may justly feel that his old gun is all that is to be desired. The all-around type of shotgun is pretty firmly established as a seven and a half pound gun, choke bored and modified, of as good a grade as the owner can afford. There is a great divergence of opinion in regard to the all-around rifle, but general opinion is more firmly establishing the sporting rifle for the .30-06 cartridge in this place every day.

Perhaps the possessor of two such weapons has all that he needs for American shooting; if he feels so, he is fortunate. I sometimes look back upon the days when I only had such a battery and wonder if I was not better off than I am today; certainly I was quite as happy in their possession as I now am in the more dignified assortment, and of one thing I am positive, which is, that I could shoot *quite* as well as I can now, and bagged just as much game. Colonel Roosevelt once said to me that he felt that one rifle was a necessity to every red-blooded American, but that a lot of them were a nuisance. Being one of his most ardent admirers, I was so

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impressed by this statement that I never allowed my love for all kinds of firearms to run away with my best judgment as to what was needed. I believe that I was one of the first to become convinced of the all-around superiority of the Springfield rifle and cartridge and this also was due to a talk which I had with the Colonel upon his return to America from East Africa. Subsequently I became the owner of a shotgun that I consider as near all-around perfection as is possible. One may become convinced of the practicability of the all-around rifle and shotgun, but no matter how near the ideal they may approach, and I firmly believe that mine do, no matter how firmly convinced we may be that in the long run our record will be larger if we adhere to the one gun principle, the fact still remains that the all-around weapon, (leaving aside the personal factor that we undoubtedly do shoot better by not switching from one gun to another) cannot in itself be as good in every instance as the special gun for the purpose at hand.

After all, for those of us who are enthusiasts, what can be more gratifying and give a greater compensation than a well-regulated battery of fine weapons. Many sportsmen would dearly

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love to possess a good battery who cannot afford one; nevertheless, they love to contemplate it. Others would have one if they knew what to select. It is for these that I write.

The most elaborate battery from the practical point of view can be limited to nine weapons, as listed below, and right here it is well to state that my selection of the ideal battery must not be considered an arbitrary one; conditions vary, what is one man's meat is another's poison—the gun that is just right for Bill will not suit Jake at all. The selection must be governed by those calibres and types of weapons that suit our tastes the best and inspire the most confidence. They must be also governed by our physical development. Some of my readers are sure to consider some of the weapons enumerated entirely unnecessary, as indeed they may be for their use, but it should be borne in mind that the list pretends to contain the ideal battery for North America and, therefore, to cover the needs of the average man, most suitably, for every purpose from Alaskan bear to rail birds.

To begin with, there should be an accurate small bore target rifle of the finest which can also be used for squirrels. In this instance the

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new Winchester Model '52 stands alone, no more perfectly finished and accurate target rifle was ever produced; some may feel that one of the popular little light weight trombone action rifles is better for squirrels, but the knowing sportsman realizes that this shooting, which requires the most accurate rifle work, is best accomplished with a heavy man-sized weapon.

The next is a light weight short weapon, handy and easy to carry, powerful enough for black bear and deer, and a comfortable weapon to carry through a fatiguing day's stalk above the timber line for goats and sheep, and with the necessary flat trajectory to facilitate hitting them at long range. Such a weapon is also the ideal one for use on the larger species of vermin, which calls for an extremely accurate rifle, such as wolves, coyotes, foxes, woodchucks, etc., such a weapon as the justly popular .250-300 Savage or the .256 Mannlicher-Schoenauer.

Third, an all-around weapon capable of doing all that the second rifle will and powerful enough for the largest game found in America, one that is not too large for deer and is ample for grizzly, moose, elk, and Alaskan brown bear. For such a weapon there should be a great variety

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of loads, each with a sufficient reason for being called the best for the different varieties of game. As such, the .30-06 Springfield stands alone, though there are those who will prefer a Mauser. One can take his choice between the 1895 Model Winchester, the new Model '80 Remington, or the U. S. Government musket.

Fourth, a large calibred, powerful weapon capable of delivering a smashing knock-down blow at short range. Such a weapon might sometimes be used in thick cover for moose, but would primarily be intended for Alaskan bear. It should be a .405, a .45-70-500, or a .50-100, which confines it to the Winchester Model 1895 or the 1886, unless a foreign rifle is selected, such as the 9.5 mm. Mannlicher-Schoenauer, or a .404 or .425 Mauser.

Coming to the shotguns, the first should be a light well-balanced field and cover gun, and because of its lightness should be as good a grade as can be afforded, for of the entire battery it will in most cases be put to the greatest use. Some will prefer a twenty or a sixteen-bore, while the majority will still cling to the light twelve. This is a matter of personal preference, and should be governed by the weight to be tolerated

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and the proficiency of the shooter. If a twenty, $5\frac{3}{4}$ to 6 pounds weight; half choke in the right barrel and full in the left; a sixteen, of 6 to $6\frac{1}{4}$ pounds, right improved cylinder and left three quarters, or if a 12, $6\frac{1}{2}$ pounds, right improved cylinder and left half choke. The barrels should be 26 to 28 inches long, by all means automatic ejector, with the possibility of a single trigger.

The duck gun is usually a heavy twelve-bore today, because of our inability to secure ten-bore shells of factory make to give it its full range and power. This gun should be of at least $7\frac{3}{4}$ pounds weight, bored for three inch cases, capable of firing $3\frac{3}{4}$ drams of powder and $1\frac{1}{4}$ ounces of shot; the barrels should be 30 to 32 inches in length, 80 per cent choke in the left barrel and slightly open in the right. It should by all means have automatic ejectors, and a single trigger in the rear position which allows one to shoot with a glove on in severe cold weather.

Some will suggest that the above can also be used for the traps, but the trap gun is generally required with a longer and straighter stock which will not lend itself to the best work in the blind or sink box. Nor do I recommend the pump as the best for duck shooting, despite its un-

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doubted advantage in rapidity of fire, as one of necessity has to shoot a barrel of the same boring for both long or for near shots; also, it cannot accommodate the long shells required for the heavy charges recommended.

For the traps, the gun should be a special single barrel trap gun or a pump at the discretion of the shooter. There is an undoubted advantage in accurate alignment for clay targets in the single barreled weapon.

Lastly, the sidearms are a heavy belt gun for self-defense, and a small bore for shooting game for the pot around camp and for target shooting when it is not convenient to use the larger weapon. The former should be a Colt .45 Automatic, a .44 Special S & W, a Colt .38-40, .44-40, or the old .45, either the New Service or the Single Action type, and by all means the latter if it is to be used on horseback. The little "meat-getter" may be a .22 target pistol, a Colt or S & W revolver, or the Colt or Reising .22 Automatic.

Along the line of those suggested, my own battery consists of the following:—

1. A Winchester Model '52 target rifle, .22 calibre.
2. A Mannlicher-Schoenauer carbine, calibre .256 weigh-

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ing 6½ pounds with an 18" barrel, and equipped with a Mignon four power scope.

3. A Sporting Springfield rebuilt by a famous gunsmith.

4. A .450 British Single Shot Express.

5. A 20-bore Parker, D. H., automatic ejector and single trigger, weighing 6¼ pounds with 28" full choke barrels.

6. A 12-bore L. C. Smith "Monogram" ejector, weighing 7¼ pounds with a pair of 30" full choke barrels of Whitworth steel bored for 3" cases, and with a lighter pair of 28" barrels modified choke.

7. A Remington 12-bore Automatic, modified choke solely for the sink box.

8. A .45 Colt Automatic.

9. A .22 Reising Automatic.

There are other guns in my collection including several .22 calibre rifles; a Winchester trap gun; a couple of imported featherweight twelve-bores and several revolvers and automatics, but they are not needed and are never used. At one time or another I have owned and shot rifles and shotguns by all of the American makers; shotguns by all the British makers of prominence, and rifles by most of the prominent British and German makers, many of them splendid weapons, but entirely disregarded in my ideal battery. There are some of them probably quite as well fitted to meet the requirements of an individual sportsman as those that I have placed, but they are not required except to fill the needs of the

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sportsman who has his own ideas at variance with mine in regard to the ideal weapon. The enthusiast who does not sport such a battery need not go out in the garden and eat worms. If I had to discard six of my nine pets today I would cling like a leech to the '52 Winchester, the sporting Springfield and the L. C. Smith, and feel perfectly satisfied that I was equipped to meet any condition that might arise; and, as I have said before, would probably make a better average shot for shot than I do now, the reason being that as the .22 rifle is primarily for target shooting and small game, the '52 Winchester will meet any requirements that such a rifle would be called for with the possible exception of aerial targets for which a light trombone action repeater would be better. Its one disadvantage would be in the discomfort of its weight and yet this very weight would make it a very telling weapon in the field. The Sporting Springfield will do all that the 6.5 Mannlicher will do, and do it better. There are times when its weight as compared with the 6.5 will be a discomfort and its power more than sufficient, but there is no time when its execution would not be somewhat superior. The same applies to the shotgun. The special Smith will

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reach out and kill consistently as far as any twelve that I have ever used, and with the shorter barrels is not an unhandy weapon to use in the field, yet the connoisseur would be sure to long for a light and handy featherweight when walking up jacksnipe and shooting woodcock in the birches.

I have tried conscientiously to limit my armament, but of necessity in line with my work I must forever be experimenting with old weapons and new devices of every variety, and so I have given it up in despair, ceased worrying and allowed the gun cabinet to fill up again.

CHAPTER XI

SIGHTS

THERE are few ways that the modern sportsman can show his individuality more than in the combination of sights which he uses upon his rifles, and the sights will often tell a great deal about his personality. There are a host of different combinations which can be used, but the really good ones are usually the simplest and strongest and these have become pretty well established.

The square blade, iron sight is, of course, the best for target shooting as it gives such clear definition against the bull, but this is of little value for sporting purposes. It is not caught quickly in an uncertain light or against moving game. For game shooting the bead front sight is emphatically the best. Some prefer the full Jack sight, while others speak for the semi-Jack.

If the rifle is primarily for quick snap shooting at running game in thick cover, such as we experience so often when hunting whitetail deer,

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the full Jack is all right, but on the all-around rifle it is too large—for long shots it covers up too much of the animal. Consequently, I prefer the small bead and, as my eyes are normal, I find it quite quick enough for me. This, however, is a point which every one should decide for himself.

The material of which it is made is of next importance. There is no doubt that the ivory bead is the best and it is not as likely to give off a glint of reflection on the side nearest the sun; but on the other hand, it is not as durable as the gold bead and I, therefore, recommend the latter for the sportsman who is liable to give his rifle really rough service in out-of-the-way places.

On the sporting rifle the complicated types of globe front sight should be strenuously avoided. They have no place except on the .22 which is used at short range or on the strictly military target rifle.

The American sportsmen were quick to acknowledge the superiority of the peep back sight, and in so doing, are to a great extent ahead of the foreign riflemen, who, as a whole, still adhere to the old fashioned folding leaf express or flat-top, open sight.

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There are some people who are prejudiced against the peep sight and insist that they cannot use it as quickly or as accurately as they would an open sight, but I am quite convinced that this is only because they have not given it sufficient trial to become used to it. When a man has been in the habit of drawing a fine bead into a small notch, focusing these two points upon his game, it is rather disconcerting to be handed a rifle equipped with a large aperture peep sight and to be told that all he has to do is look through it, putting his front sight on his game to make a kill. It seems too easy to be possible that accurate work can be done with what appears to be such a slipshod method, but as the human eye naturally seeks the center of a circle without effort, one is not under the same mental and physical strain to correct the aim, when an aperture sight is used, and it is consequently faster. Also, as it is usually situated on the tang strap or the receiver of the weapon, it affords a longer sighting plane which promotes accuracy.

The farther apart the sights are placed, the better for quick, accurate shooting. For the .22 calibre rifle or any small calibred sporting weapon, and for the old fashioned Schuetzen tar-

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get rifle, the tang sight is the best. In this position, the sighting plane is made as long as possible. The rear sight is then within an inch or less of the eye, where the aperture is easily found but for this very reason, it is dangerous to use upon the modern, high power, sporting rifle with its heavy recoil, as it may ruin one's eyes.

The receiver sights are therefore the best for general use and as an all-round sight for target and game shooting, those made by the Lyman Co. are unsurpassed. Not only are the receiver sights as close to the eye as is safe with a rifle which has a heavy recoil, but because of their position on the weapon, they are far stronger and are capable of standing more hard knocks in the field than the tang sight with its flimsy support possibly can.

It is my opinion that the finest rear sights ever developed for all-round use are the Lyman No. 48 Micrometer and the No. 85 Micrometer. These are two of the strongest and most reliable sights ever made. When the point-blank range is found, the sights can be positively locked so that even a bad fall would not disarrange it, and this is a good life insurance when hunting dangerous game. These sights can be attached to

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practically any of the modern bolt action weapons with the exception of the Mannlicher-Schoenauer. For this weapon they provide a receiver peep sight which is equally good but, unfortunately, is not as strong, due to the construction of the rifle.

Many users of the bolt action rifles favor bolt head peep sights as provided by the same company, but as there is always considerable play in the bolt, these sights are not nearly as satisfactory. They have the advantage of bringing the sight closer to the eye until the moment the trigger is pulled, then as the bolt goes forward, it carries the sight farther away from the optic, which makes it somewhat safer than the tang sight, but they are not nearly as strong and can be very easily knocked out of adjustment. In fact, due to there being considerable play in the bolts of weapons of this type, they are subject to some inaccuracy.

If one prefers an open sight, it should be of the express type and with several leaves for range elevation with a platinum line inlaid from its base up to the bottom of the V, if the V type is used. In this case a barley-comb front sight should be attached. One of the worst mistakes commonly

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made is to use a barley-comb sight with a U notch rear sight or a bead front with a V notch rear sight. Either is obviously wrong, as one sight will not fit into the other, but no matter which is selected, either the V or U, it should be a flat top sight and not the atrocious buck-horn which is supplied on almost all of our stock rifles as they come from the factory and which must have been designed in the interest of game preservation as it almost completely hides a running deer from view when the weapon is properly held.

The sights for the pistol or revolver should be of the simplest kind, for it should never be forgotten that the main thing in the use of the one-hand weapon is speed. Slow fire with the six gun, which is distinctly a weapon of defense to be used at short range, is of little use to anybody and is not to be encouraged as it surely will inadvertently be through the use of finely made sights. I, therefore, recommend just a simple U notch rear with a large bead front sight if any departure from the factory variety is desired. While finely adjusted target sights can be used on the out-and-out target or small game pistol, they have no place upon the military, dueling or defensive weapon.

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Telescope sights are only valuable for certain phases of the shooting game. As they magnify the slightest tremor, they are excellent for preliminary practice in target shooting, though it is noteworthy that almost all of the long range military records are made with iron sights, despite the fact that the scope is generally allowed. They are of great value to the squirrel or the woodchuck hunter, as these little animals are most often partly concealed when shot at and, although the range is usually comparatively short, they afford a small mark. Under some conditions, they are also valuable for the mountain sheep or goat hunter where long shots at standing game of medium size are the rule rather than the exception, but they have no place in the moose or deer hunter's outfit, as his shots are generally at short range and at moving game which requires quick action. The scope is not fast and is really only satisfactory for a rest shot where one has plenty of time.

If a scope is adopted for game shooting it should not be one of those with complicated adjustment such as are made in this country and which are always getting out of focus at the critical moment. It should be a universal focus scope

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with a strong but simple mount with channeled base, so that by dropping the head, the iron sights can be used. It should never be more than four power—this gives clear definition—a wide field and maximum illumination—higher powered scopes give very little illumination—a very narrow field of vision, so that it is hard to find an object and they magnify every tremor of the shooter. The scope should be directly over the center of the barrel, with marked adjustment of the cross hairs for elevation instead of base adjustment of the scope tube and should be without windage adjustment which is not required on a scope for game shooting. Such a scope is fool proof and will stand a lot of hard knocks such as it is sure to get. For that reason, I consider the Kahles scope, supplied with the Mannlicher-Schoenauer rifles, the best. I have one which I have given the roughest treatment, generally carrying my rifle by it, using the scope much the same as the handle of a travelling bag—and I have never had the slightest trouble with it.

The idea of a sight on a shotgun is as old as the shotgun itself and all kinds of sights have, at different times, been tried out by all kinds of sportsmen and, generally speaking, have sooner

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or later been discarded. We have had open notch rear sights, peep sights, individual sights for each barrel on double guns and several monstrosities. The most popular are the so-called "trapshooting" sights consisting of a rather large ivory bead at the muzzle and a smaller one midway down the rib of barrel.

It is my opinion that the average good shot will shoot just about as well at game without any sights at all on his gun as he will with them, providing that his gun fits him properly. Of course, this is not equally true of trapshooting where the aim is more deliberate.

But most good shots, I am speaking of really good field shots, do shoot more or less instinctively. We must remember that we have about a thirty-inch spread in a twelve-gauge gun and, consequently, can afford to sacrifice a small degree of accuracy to gain a little more speed. We could not expect to do such quick work on game if we had to devote even a small part of our attention to aligning the sights.

Good game shots, with the scatter gun, may be divided into two classes; those who bring up their guns ahead of the game and fire the moment the butt hits the shoulder, and those who more

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methodically bring up the gun behind the bird and follow through, pressing the trigger as they get the proper distance in front of their target. And it is quite safe to say that, despite the fact that there are experts in both classes, the majority of the best wing shots are among the first class or those who automatically bring their guns to bear ahead of their game on the swing with it and fire almost instantaneously. This means perfect co-ordination of gun and all of the facilities which are brought to bear in shooting. Under ideal conditions, the latter class of slower shots might improve their scores with the peep sight, but I fail to believe that the first class ever would.

The great advantage that an accurate rear sight would have lies in the fact that the majority of those that hunt do not know enough about gun fitting and do not shoot enough to really learn what their own requirements are. The average man who spends a couple of weeks a year in the shooting field, firing two or three hundred shells at game, is not shooting enough to learn what his faults are and what would best meet his requirements. Consequently, a very small minority of sportsmen shoot guns that really fit them.

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As a proof of this, you can take any number of sportsmen out and have them shoot at a stationary target with their own shotgun and surprisingly few of them will be able to center their loads on the plate. And if they cannot do this with a shotgun at thirty yards at a stationary target, how many can at rapidly moving game? Fortunately, for their success in the field, the spread of the charge is wide enough, if they shoot fairly well, to get their birds into some part of the pattern.

It is this type of man who will get the greatest help from the rear sight, for it will eliminate cross firing or under shooting, due to poor alignment with an ill-fitting gun. Undoubtedly, it will be a great help for trapshooting where one is standing with the gun at the shoulder, and with good footing, generally in a clear light, with a background against which the targets will show clearly and where they are flying directly or almost directly away from him and what is more important, where the gun is brought to the shoulder and the sights are aligned properly before the target is released.

It is an easy thing to use sights on a shotgun under such conditions; it is entirely another mat-

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ter to use them on a wet day in the blind or battery when you are cold and stiff, when the ducks tumble into your decoys unexpectedly and you sit up hurriedly to shoot from an uncomfortable position. It is another thing to use them in the uncertain light of early morning or dusk or when the rain or snow has clogged up the aperture, or when tramping uphill and down dale through the woods after grouse where the sunlight plays in dazzling bright spots through the uncertain shadows of your surroundings.

One does not have to try sights on a shotgun to prove this. Try them on your rifle. It is an easy thing to learn to hit tin cans or bottles in the air with a .22 rifle. You know where and when they are going to be tossed. You stand with your rifle at your shoulder and your companion tosses them up in the desired direction. Your sights are aligned beforehand and, with a little practice, you quickly learn to hit them. Try *go ahead* the same thing at a neighbor's cat running down *and say* the alley, or shooting at a rabbit dodging through the briars, when your gun is brought quickly to your shoulder without any preparation, and it is entirely a different thing to align the sights on the same size object.

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It is human nature for the enthusiast to go to extremes, and because some experts have recommended a sight on a shotgun for trapshooting (and it will, undoubtedly, be a great help to the average trapshooter), many sportsmen will jump to the conclusion that it will help them in the field, and, after trying to use it and meeting with little success, they may overlook its good qualities and peevishly discard it altogether.

Returning to the subject of rifle sights, I would add there are several new developments since I started to compile this book, but I do not consider any of them of sufficient value to warrant recognition.

CHAPTER XII

TRAPSHOOTING AS AN AID TO FIELD SPORT

THE question is often asked whether trapshooting increases one's ability in the field and the matter is open to a good deal of discussion. In my opinion, a lot depends upon the personality of the shooter to be considered. For, while I believe that in most cases it will help considerably, in others it will have decidedly the opposite effect.

Unquestionably, it is the best way to break in the novice, as, under the careful supervision of an old hand at the game, he will be corrected at the start in the many little faults that the beginner is so liable to acquire and which are so hard to break later on. Thus, while familiarizing himself with the proper handling of a gun and learning the rudiments of shooting under conditions where he is sure to be cooler than he would be in the field, he is becoming a safe man to take out.

But let him practice until he can break eighty-

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five per cent of the clay targets, then fare forth in quest of feathered game, and he is doomed to be rudely disappointed.

The reasons for this are easily given. Trapshooting is methodical and tends to make a man deliberate. A grouse or a woodcock does not wait for the word "pull" to flush, nor does a sportsman walk through the woods all day with the gun at his shoulder. And no matter how often the angles are changed in trapshooting, the shots are always more or less the same; they are always going away from the shooter, at the same rate of speed, at the same distance from him, and at about the same angle of elevation; they do not dodge about but sail straight away (except on windy days) clearly to the open. As an illustration of this, a few years ago a friend of mine who had, at the time, won the amateur championship of one of our leading trapshooting states, expressed the desire to accompany me on a trip to the lower Adirondacks for a few days woodcock shooting. The sport was good, due to a heavy flight, and in two days and a half I had bagged twenty-two birds, while my companion killed three, despite the fact that the best opportunities were offered to him. This man could

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easily have made me look like a beginner at the traps, but he lacked field experience.

To be sure, many of our expert trapshooters are wonderful wing shots, as are many who are known to the writer, but in every case that I can call to mind, they are old hands at the game, who had their first lessons in the field and were very proficient there before they took up trapshooting, or they were men who had the necessary time and means at their disposal to devote to both.

Almost any man can learn to be a good clay-pigeon shot by careful and constant practice, but many of these lack the qualities which are important to the practical hunter. For the sportsman who has the opportunity for but a limited trip each year in quest of his favorite game, be it covert shooting or wild fowl, a reasonable amount of practice at the traps is a great help. It gives the hand and eye the necessary practice to keep working in unison and in good time, which is so important, and makes one careful of his leads and also of the proper handling of the gun.

But to break into the first class of pigeon shots one has got to acquire the habit of shooting methodically, as it is this machine-like regularity in

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shooting, which only comes from constant practice at the traps, which is the secret of making long strings of hits. This in itself will often mar one's field shooting. One cannot shoot methodically at grouse or woodcock.

Therefore, while a help to be reckoned with in duck shooting, it may have the opposite effect for upland work and, while excellent practice for the excitable, nervous gunner, it sometimes slows up the cool hand to too great an extent.

Undoubtedly, the regular method of trap-shooting is not the best field practice, no matter how fascinating it may be as a separate branch of gunnery. To begin with, the best type of trap guns are in no sense of the word good for practical field shooting, and since the advent of the automatic trap, the shooting has become so rapid that a squad of gunners will go through their string of twenty-five targets each in about ten minutes. This is so fast that a novice cannot give much attention to the cause of his misses.

To get the most effective practice out of it for your fall shooting, it is plainly evident that some other method must be adopted to attain the best results. Make up a squad, shooting with the gun at the hip when the command to pull

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is given, with the privilege of using the second barrel if necessary to break the target. Also practice walking towards the trap house from the twenty-five yard mark and shooting at birds unexpectedly sprung. Practice at birds thrown across you and towards you and at doubles. Squads can be formed to take up this eccentric style of shooting which affords far more fun, is better practice, and has the added charm of being much less expensive as it takes more time.

For those that would like to go in for this form of shooting, aside from the regular shooting at their clubs, an excellent device is the hand trap. This is practically the same as the expert model only it has two handles, instead of the base to be fastened to the flooring, and is operated at arm's length, throwing the targets fully as hard as they would be thrown from the regular "expert." It requires no practice and can be used anywhere there is room to shoot in safety.

Another excellent device is the target slinger. This contrivance is held in one hand and the target is propelled by the force of the operator's arm instead of a spring. It is light and handy to carry around and has the added advantage

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that, if necessary, when alone the shooter can throw targets for himself by holding his gun in the left hand while the target is thrown with the right. By means of an elastic which is put over the shoulder while shooting, the slinger is prevented from falling to the ground when it is dropped as the gun is grasped in both hands to shoot.

Of course it is much better to have some one else to throw the targets, as the shooting is then more natural and a greater variety of angles can be had. Also, birds may be thrown by one behind you at unexpected intervals while walking through a field, thus affording the best kind of practice. The targets can be propelled at a greater speed with this slinger than by an automatic trap, if desired, and this available speed and distance, together with the difficult angles attainable, afford shots of which an expert, in my opinion, could not hit better than seventy-five per cent. Of course, the birds thrown low to the ground are falling rapidly soon after leaving the trap and this is the only fault that I have to find with the slinger, as it is almost impossible not to overshoot such shots with it, and when shooting at game birds, no matter how straight

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and low to the ground they appear to fly, they are always rising a little.

Trapshooting, as we know it at the gun club, is a fascinating sport that is diverting the attention of thousands of busy men in search of a few hours' relaxation, but it is not the good field practice, in its present state, that it could easily be made. The English sportsmen better appreciate its value in this respect, as they have numerous shooting schools where they go for pleasure and practice and shoot at the clay targets under all possible conditions. They are sprung from towers ninety to a hundred feet high, going away from or towards the shooter, and from numerous traps well concealed in field and cover that offer the best out-of-season practice.

Trapshooting will afford one the opportunity to learn the peculiarities of his gun and what loads are best suited for it, as the shells that give the best results on the targets are very apt to be the best in the field, and, if practiced with the above mentioned methods, should lead to greater efficiency in the game field. But shooting under the cut-and-dried rules of the Amateur Trapshooting Association it is nothing but a game, far removed from practical shooting. It

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is this short-sightedness upon the part of the A. T. S. officials who close their eyes to the fact that they are catering to the cranks and keeping the great majority of the sportsmen of the country out of the game that has stagnated trapshooting as a sport.

In England, where they use arms more nearly approaching practical field weapons, and release the target while the shooter stands with his gun below the elbow, using both barrels if necessary and a load of but one ounce and an eighth of shot, instead of the American charge of one and a quarter, the game is much more interesting to both the contestants and the onlookers, and of some practical value. Unfortunately, due to the fact that the visiting American teams (who are specialists) have invariably beaten them in the international contests, the Britishers are seriously considering the adoption of our rules. It is to be hoped for the good of British shooting that they never will, as their game, lacking the mechanical monotony of the American method, is one which commends itself to the hard-headed sportsmen of the country as well as the minority party of cranks.

CHAPTER XIII

ARMS FOR THE SPORTSWOMAN

THERE are a lot of women afflicted with gun cranks for husbands who, in sheer desperation, would like to learn how to shoot. Yet most men scoff at the suggestion of teaching their wives, taking it for granted that they could not learn, or would surely kill themselves or some one else trying, while the woman, through a natural timidity regarding firearms and a lack of confidence in her own ability to become skilled at a game in which she is fully alive to her own ignorance, sits meekly back with folded hands and takes it for granted that she never could.

Generally speaking, they are both wrong. I have never had but one wife to teach, but I have instructed several other young women and have been surprised to find that, if they really want to learn and apply themselves to it, the normal young woman will learn fully as quickly as the average man who has never had any experience with firearms. To begin with, though highly

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strung, she generally has better control of her nerves, and her confidence increases with leaps and bounds when she realizes that, despite his greater strength, she can hold her own at this game with a man. Confidence has a great effect on the nerves and nerve control means everything in target shooting.

Of course, when it comes to hunting rifles, she has her limitations, particularly at long range work. You cannot expect her to go out with an eight and a half pound .45-70,—at least, few of them can do so. In the first place, it is too heavy for her to hold off-hand and it would kick the jaw off a small woman anyway, and if she lies down to shoot, the effect of the recoil is even more severe; but in the .22 calibre and the semi-high power small bore class she can hold her own.

The first step in her instruction is a .22 calibre rifle, beginning at 25 yards, with a large target on which all of the shots can be spotted, paying more attention to proper position, trigger squeeze and the safe handling of the weapon.

It is amazing how careless a beginner can be with a loaded gun, even though at heart she is still in deadly fear of it. Personally, I rather encourage a beginner to let off her rifle acci-



OFFHAND SHOOTING.

Upper—Perfect form. Left hand well back, elbow against side, right elbow high, body well balanced on both feet, eye close to sight.

Lower—Bad form. Body off balance, head bent over, and eye too far from sight.



TAKING AN INCOMER.

Upper—Good form. Body well balanced, left hand drawn back for better control of the muzzle, bird being taken at proper angle.

Lower—Poor form. Weight on left leg, body too far back, left hand too far forward, bird too far over.

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dentally, taking care to be well behind the muzzle when it happens. It is an easy thing to make the patient do this by talking to her and attracting her attention while her finger is on the trigger (it is still easier with a man who is generally heavy handed) and when it goes off, give her a good lecture on what might have happened,—once is generally enough.

Right here we are confronted with the problem of what rifle to buy for her that will be powerful enough for deer and have the other cardinal requisites of light weight, freedom from recoils and flat trajectory up to 300 yards.

The .25-20 H V and .32-20 H V are not nearly powerful enough. The .38-40 has too much recoil and the trajectory is too high, while all three (rapidly) lose accuracy beyond 100 yards, being as a rule incapable of better than 12 inch groups at 200 yards. And it should be remembered that the sportswoman will shine at standing shots at medium range rather than at quick running shots at short range which are much more apt to disconcert her. The .30-30 is a killer. The rifle is light and the trajectory flat; but, although on paper it has only 7.20 foot pounds recoil, it has a nasty way at times of

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bruising the shoulder and must consequently be overlooked for the beginner with the .303 and .32 Special. The .25-35 Winchester with its light recoil, only 8.39 foot pounds, and the muzzle velocity of 1,973 feet per second, compares very favorably with the .30-30, the velocity of which is only 2,023, while its recoil is more than double that of the .25-35. The striking force of the .30-30 is, of course, much higher, being 1,160.2 foot pounds at 100 yards against 749.6 foot pounds for the .25-35. However, the .38-40 high velocity which has only 771.9 foot pounds energy at the same distance has always been a very popular cartridge for deer. Add to this the advantage of a mid-range trajectory of only 5.69 inches at 200 yards and it is hard to beat as a powerful light weight rifle for a woman to begin with.

I selected the model 92 Winchester carbine for this cartridge, fitted with a Lyman Receiver peep sight to increase the sighting plane of the short barrel and a shotgun butt with a Silver's recoil pad. This little gun, weighing 6½ pounds, is sufficiently powerful for game up to and including deer, and if she should have occasion to

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shoot at a heavier animal she is generally backed up by a guide with a more powerful weapon.

The smooth elegant lines of the Savage 1899 lends itself to a woman and I know of several who use it, but I am inclined to favor a gun with a big hammer for the novice rather than a hammerless. All of the automatics are too heavy to be considered.

After some experience has been gained with the .25-35 it is an easy step, if one prefers it, to the .250-3000. The recoil of 5.2 foot pounds should not be noticeable after considerable shooting has been done. But it is a good deal for her to handle to begin with.

In securing a weapon for this cartridge I would prefer the new bolt action Savage, Model 1920, if, as is likely after serving her apprenticeship, the sportswoman should aspire to larger game than whitetail deer and black bear, going forth in quest of moose, elk, or the larger species—it is only a slight expense to secure a new barrel and action for the .300 Savage cartridge. In a rifle of only six and a half pounds weight and a recoil of 11 pounds, generating a muzzle energy of 2,428 foot pounds, it is the ideal weapon for

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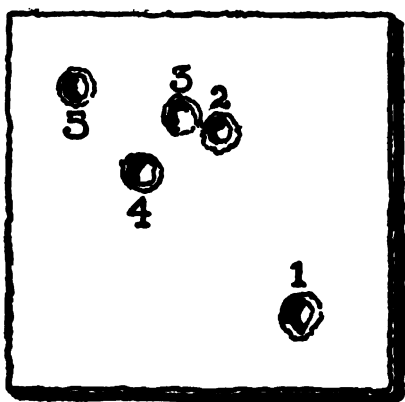
a woman to use for moose, etc. We must not lose track of the importance of light weight when a woman is to use it and the more powerful .30-06 Springfield invariably weighs a pound to a pound and a quarter more.

In my own case, or rather that of my wife, which was before the advent of the .300 cartridge, I jumped from the .25-35 to a Mannlicher-Shoenauer carbine, with an eighteen inch barrel, weighing six and a half pounds, and shooting the famous 6.5 mm. ammunition. This beautiful little weapon, because of its exquisite refinement of finish and superb balance and proportions, fitted with double set triggers, is certainly a serious contender for feminine favors,—particularly when we recall that in the hands of a noted sportswoman it accounted for a record elephant in British East Africa.

The 2-inch group shown was made by a woman who had started shooting but a month before with a .22 rifle and had never fired a shot with an intermediate calibre until this group was made with the .25-35 at 40 yards. The woman that could make such a target with five consecutive shots the first time she fired a high power rifle should be able to qualify on deer.

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The question of a shotgun is more easily solved. The right weapon to begin with is a 20 gauge hammerless ejector of about 6½ pounds weight, with 28 inch barrels, right half choked and left full. It must be remembered that one cannot successfully shoot a small gauge gun with open



bored barrels as the pattern will be too thin to be effectual and consequently, a beginner armed with a 20 is badly handicapped by a very close shooting gun. This, however, is really the less of two evils, as few women can stand the recoil of a twelve bore to begin with. Later, after some proficiency is gained, a sixteen bore can be adopted and that, to my mind, is the ideal weapon

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for a woman. The double is better than a repeater, as it is easier to operate and she can have the advantage of an open and a full choke barrel and be better prepared for all conditions.

Every one must work out his or her own problem at this game, but my advice is to teach her to shoot. It makes it easier to get away for a trip and to buy new guns, for she understands your feeling better. You may have an ammunition bill that will break the bank if she gets the fever (I did) but it's worth all that and more too to keep her out in the air at the finest kind of exercise, and it will give you both many a happy day together at the targets which otherwise would have been dull and uninteresting.

After proficiency has been gained with the .22 calibre rifle on the fifty and seventy-five yard range, the next step is the .25-20. If taken slowly, there is little likelihood of developing a flinch, and this should by all means be avoided. A woman is delicately organized and if once a flinch is developed it may be necessary to begin all over again.

To digress a bit, after she learns, she is apt to be enthusiastic and insist on being taken along on the next hunting trip, and most old-timers

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will sit back with a knowing look and shake their sceptical heads at the proposal. Certainly I cannot advise; a man should be the best judge of his better-half's capabilities (though often he is the worst). He should not expect a delicately reared girl to go out in the woods and work like a Siwash squaw and enjoy it; but there are adaptable young women that can be good sports and add considerable charm to a hunting expedition. There are lots of men that have killed their moose on several trips into the North woods, and to whom it is an old story which is growing stale, who could get a new pleasure out of it by coaching their wives through the summer, and seeing them get their trophy in the fall.

CHAPTER XIV

ENGLISH VS. AMERICAN SHOOTING

THOSE of my readers who have the patience to follow me this far may wonder why I have devoted this space to a comparison of British and American shooting. Having studied conditions for some time and noted the course of events, I believe that a better understanding of British shooting conditions would be of the utmost value to the sportsmen of this country; for unless radical changes are made in our methods of game protection and shooting rights, the time is rapidly approaching when most of us will have to lay away our guns for all time. This is not the place to go into a discussion on propagation, but there is a lot that we can learn about shooting such as is afforded in one of the most thickly populated sections of the civilized world, which might start us thinking in the right direction.

The average American sportsman has a very vague idea of the prevailing conditions which

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have such an important bearing on the sport in the British Isles, and because of his unfamiliarity with them gives British shooting very little consideration, believing it to be but the cold-blooded slaughter of half-tame birds.

While the Englishman is apt to hold our comparatively plebeian sport in contempt, due to his ignorance of the nature of the shooting afforded here, a fair comparison is most difficult because the shooting here and abroad is so entirely different—so much so that the only sameness lies in the fact that the object is to kill feathered game on the wing with a shotgun. The writer is in no way attempting to champion the British method, but would endeavor to give to it the credit due.

European shooting outside of the British Isles will not be considered—for whereas excellent sport may be had in Norway, parts of the Tyrol, Bohemia, and in the Caucasus, where the shooting is rough and more like our own—in no other part of Europe is shooting or the rearing of game carried to the high state of perfection that prevails in Great Britain.

There is no duck shooting to be had that in any way compares with even second-rate wild-fowl

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shooting as we know it in this country. Decoys are seldom used—and the shooting is done principally by floating down on large, unsuspecting flocks of sea ducks resting in open water, and firing a heavy charge into them from a swivel gun before they rise. This method—"Bushwhacking" as it was called here—used to be practiced on the Chesapeake by unprincipled market gunners, but was never countenanced by true sportsmen, and has been harshly put down by proper game legislation.

For shore-bird shooting the conditions are more favorable, as there is really fine shooting to be had in Ireland on the marshes for Wilson snipe and plover, where the shooting is done by walking up to the birds with the aid of dogs. And fine bags are often made of these most difficult and sporting birds, as the "old countryman" is remarkably proficient at this style of shooting. The birds, however, are seldom, if ever, found in the numbers that we encounter in the Mississippi Valley, or at some of the famous places along the Atlantic Coast.

Woodcock, which, by the way, is double the size of our native bird, is also found in fair numbers in Ireland—and some years in England,

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but is generally picked up in the course of the day's shooting—and is seldom hunted for in particular, as it is not plentiful enough.

The principal shooting is at grouse, red legged partridges and pheasants, and these are raised in great quantities on the large estates where they are carefully preserved and fed until the open season permits their being shot.

In many cases the pheasants are hatched from incubators and raised in brooders, and not liberated until two or three weeks before the season opens. In some of the wilder sections of the country, particularly in Scotland, the grouse lie on the moors in their wild state, being afforded perfect protection from their natural enemies and the weather by the thick heather, but they are always carefully watched by the keepers to prevent poaching.

Of course, outside of the preserves there is quite a lot of good rough shooting to be had—the game being that which has drifted off of the large adjoining estates. Syndicates, as they are called, are formed by from four to a dozen sportsmen who purchase the rights from the farmers for their small shooting for the season, arranging to go there on certain specified days in the season

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to shoot what they can find. Often the rent is arranged at so much a head for the game bagged.

Naturally, under such conditions, the shooting is extremely expensive, and princely sums are often paid for the shooting privileges of one of the large estates for the season. Therefore but few can afford it but the wealthy, but everyone who can, strives to get out each year for a couple of days' rabbit shooting in one place or another, and fine sport can be had, as the cotton-tails thrive in tremendous numbers from one end of the land to the other.

The season opens on the twelfth of August and closes on the twelfth of December, which speaks well for the methods of propagation, and in this respect we could well afford to take a lesson from the British sportsman. A day before this most important of dates to an Englishman, the railroad depots are full of sportsmen loaded down with shooting kits and guns, who are off for some estate to which they are so fortunate as to be invited by the thoughtful owner for a couple of days' grouse shooting.

This is, indeed, often almost as great a pleasure to watch as it is to participate in. After an early breakfast at the Manor, the sportsmen as-

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semble in their neat and stylish shooting togs and, mounted on ponies, start across the moor for the butts (or blinds, as we would call them), which are generally made of sod to be as inconspicuous as possible, and are situated so that the driven birds when flying over must pass within range of one of them. In each one of these mud castles the gamekeeper, who is in charge, leaves a shooter,—which are generally not more than six in number,—with plenty of ammunition, a pair of double-barreled guns and a gillie to load the spare one as he shoots the other. The rest of the equipment generally consists of a sandwich box and a flask of brandy, a mackintosh in case of rain, and a shooting chair. I have never seen a sunshade added to this, but would not be surprised if it was at times. Then the beaters, armed with staffs for thrashing the cover, and making a universal din, start towards the butts, driving everything before them. Soon the birds start coming over, first a few of the wildest in singles and pairs, and then in coveys of a dozen or more. It is then that the novice at the game will get his first lesson in respect for English shooting, and also for the gillie kneeling behind him with the extra gun, for despite the fact that

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his pieces are single-triggers and ejectors, he could not possibly load rapidly enough for himself to take advantage of all his opportunities.

Towards the middle of the day the party will gather together for luncheon, at which the ladies, if there, will drive out to meet them, and later in the day they will start for some other part of the moor, where other drives will be made. It is not at all exceptional for four or five guns to bag from four to six hundred brace of grouse in this way in a day's shooting.

We Americans are apt to scoff at this kind of sport, as the idea of sitting in butt with a loader behind you to handle your guns, while a small army of beaters drive the birds over you, seems highly unsportsmanlike and nothing but a slaughter. And in a broad sense this is right, for the true sportsman gains far more pleasure from tramping the wild rough country, entirely responsible for his own actions and results, and from watching his dog's work on the birds and sustaining all kinds of hardships for the sake of the sport, than he does from seeing the poor quarry grassed at the report of his gun. The Englishman would undoubtedly think the same under like conditions, but in his country they

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do not exist. The country is mostly thickly settled, and the section to be shot over in the course of the day small, so he makes the best of what he has. Perhaps he would rather get out in an old greasy hunting coat in place of his smart tweeds, but he isn't living in a camp or tramping through swamp and briers—to the contrary, he is more often the guest at a large house-party surrounded with all the luxuries of culture and refinement, where many ladies are also present to witness the sport. He is just as capable of dispensing with the many little comforts that we laugh at as we are, but why should he attempt to make hardship where it does not exist? The Englishman is far too levelheaded to do so. Perhaps he would rather kill his birds over dogs as we do, and indeed he does in the Highlands, where the game and the country is wilder, but if he does, he really needs the gillie tagging along behind him, for so many birds are found that he could not comfortably carry all the shells that he would use in a day—much less the game. And also the driven birds are far harder to bag than they are over dogs in England or Scotland. Also the shooting has in most cases to be done on the restricted confines of one estate, where pro-

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miscuous shooting every day would soon make the birds so wild that they would scatter over the neighboring land. Walking them up makes them ever so much wilder than driving, which is also more difficult, and experiment shows that it is far better to shoot fewer times, and make larger bags at these shoots, than it is to continue hammering at them day after day, and being satisfied with smaller bags.

For the benefit of those who think that this shooting is a mere slaughter, let me say that if they were to try it they would meet with one of the biggest surprises of their lives. For I can imagine nothing harder than sitting in a butt late in the afternoon with the sun low in the west when the beaters start the grouse towards you. Skimming along low to the heather, following every undulation of the ground, of which they are almost the color, at 180 miles an hour they will tax the best efforts of an expert to the limit. Or again, standing on the edge of a tall woods on a pheasant drive, when the birds hold back until the close proximity of the beaters drives them forth into the open and they come out over the tops of the trees, rocketing up and over at high speed—it is no child's play to hit them. And

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many an accomplished American sportsman who "has wiped the eye" of his bungling English guest day after day and shot after shot in the quail stubbles of the South, has hung his head in chagrin while watching this same man bring down his birds right and left using a pair of guns systematically.

And that is the whole thing in a nutshell. The English shooting is difficult, and though the birds are very often reared by hand, there is really nothing more difficult to connect with when they are driven. But the shooting is always the same, or nearly so. The first-class English shot shoots like our expert pigeon shots—with machine-like regularity. And as he has little field practice except at these shooting parties, where he must be at his best, he goes to shooting schools each year where, under the care of an expert, he is taught to take his shots correctly. It is not hunting as we know it, but just expert marksmanship.

As an illustration, Mr. R. H. Remington Wilson and Lord De Gray have been seen to have four birds dead in the air at one time. They are, of course, almost in a class by themselves, but it at least shows the perfection sometimes attained.

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Yet expert English shots will often show up very poorly in this country, where the personal element enters more fully into the game.

Almost any one can become a fairly good shot at driven game if he has any ability, and sticks to it, while without the natural qualifications one would never become a good field shot as we know it here. Tramping over rough country after ruffed grouse, or partridge—taking shots under all conditions, from all sorts of positions, where as much depends upon one's ability as a hunter and his knowledge of the habits of the birds as upon his proficiency as a shot; where every one of the shots is taken under more unfavorable conditions than one would ever experience in England, and where the physical exertion is many times as great. It is this, together with privation and hardship, and many other things besides, including the freedom to roam and hunt where you choose, that puts the American sportsman and American shooting in a class by themselves.

Personally, I would rather start out through the New England hills with a good setter, slipping and sliding up and down hill over granite crags and through beech and chestnut in quest of the old ruffed grouse, or floundering through

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tamarack, alders and white birch on the bottoms, after the elusive little woodcock than to change places with H. R. H. the Duke of Anywhere for a record day at the "Abbey."

Unfortunately our conditions cannot survive much longer. The despoiling of our forests; the drainage of lakes and marshes by thoughtless politicians; the cheap gun; the cheap automobile; moderate license fees; unrestricted shooting in the open season; together with the improvement in the roads, which makes the most out-of-the-way places easily accessible; and the enormous increase in the population—these things combined have sounded the death knell of the old-time free American shooting, and a generation or two will see it pass on forever. Natural propagation of the game birds and animals can no longer stand the terrific strain which has been imposed upon it. Many of the state legislatures, seeing the hand-writing upon the wall, have appropriated large sums for the acquisition of unclaimed lands to be used as public shooting grounds and game refuges, and these will stem the tide for a time. But can you imagine shooting upon one of these public preserves upon the opening day? The man who can afford it will

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either own a preserve of his own or an interest in one; the farmers will not tolerate the invasion of their property by increasing hordes each year.

And, consequently, unless the sole right to the game is invested in the property-owner, there will be no support for adequate game preservation.

No one will regret the passing of the old system more than I do, who have enjoyed some of the best sport that it afforded, but I realise that we will soon have restricted shooting or no shooting at all.

CHAPTER XV

THE USE OF THE COMPASS

ONE might consider this chapter out of place in a book on firearms; yet the compass is so closely related to the sporting rifle in use, and, indeed, to the shotgun in some parts of America, that I was tempted to include it—particularly as so little has been written in the past for the sportsman on its use.

On several occasions I have been asked to write a simple article on the use of the compass and upon finishing the first draft of this attempt I gave it, with considerable misgivings, to an experienced old-timer to criticize. His answer was exactly as expected, *i.e.*, that after reading it he felt rather confused. Of course he did! If one considers the case he must realize this is the fundamental reason why one so often becomes lost and thus finds it hard to extricate himself. The compass is not a fool-proof instrument; in fact, it is the least so of any that I know of and is only of benefit to us in so far as we put it to

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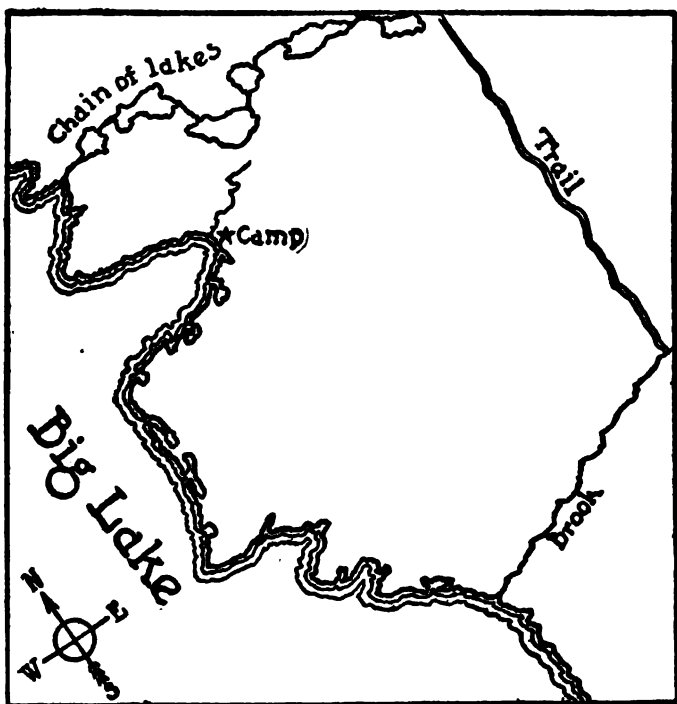
crosses his own track and then for the first time he is really in a bad way. Consternation seizes him and he doubts the accuracy of the compass without the help of which he cannot possibly come out, except by the greatest luck. There is nothing more terrifying than the unreasoning fear caused by a realization of your own helplessness in the wilderness. The strongest and coolest men are often overcome by it. Yet, every year, despite all warning, the same thing happens to hundreds of people, some of whom meet with disaster in its worst form and others have a harrowing experience to remember for the rest of their days.

No one appreciates what this means until he has been lost.

I have been lost and have several times assisted in finding others in the same predicament, and I can truthfully picture the deplorable condition that a nervous man, with no self-reliance, is reduced to in such straits. I remember one experience in the Southwest when two troopers who had been lost in the bush for a couple of days were found and had to be run down and caught, as they paid no attention to the shouts of the searchers or shots fired in their vicinity to attract

The Use of the Compass

them. These men were hungry, but they were not starving as they had not been lost long enough for that; they were not even thirsty,



as it was in the rainy season, and though cold at night, they were not suffering any undue privation, yet the nervous hysteria which they would have laughed at in others under the same con-

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dition had reduced them to crazy men. A few years ago while hunting in Nova Scotia a companion had what might have been a very serious as well as a disagreeable experience. On my advice he and his guide, who, by the way, though an experienced woodsman, was a stranger to the locality, went back to a bog about five miles from camp where they were bounded on the east by the shores of a lake, and on the south by a brook running into the lake at a right angle, and, fifteen miles to the west of them, by a trail running parallel to the lake; while to the north they were closed in by a chain of small communicating lakes. This block of country was about fifteen miles square, flat and covered with brush out of which they could not possibly go without crossing one of the boundaries mentioned, yet although never much more than ten miles from camp, it took those two experienced hunters two days and a half to get back to camp. Their first mistake was they never had taken the trouble to look at a map of the locality and the landmarks which they struck in their wandering, which should have quickly given them the general direction for home, meant nothing to them. If either of them had ever taken

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the trouble to study a map of the section he would have had a picture of the country firmly impressed on his mind, and would surely have recognized some point which would have told him approximately where they were. But this they had not done. And there was no sun. The brook to the south meant nothing to them. They came out on the lake several times, but it was twenty miles long, and they could not recognize any part of it, nor could they follow the shore around to camp, for due to the flowages and bogs along its edge, they would have often traveled fifty miles or more to do ten as the crow flies. The trail would have of course been recognized as a means of escape, but they did not know that there was one and although close to it once they were not fortunate enough to strike it. Finally, after wandering around trusting to luck, and getting weak from hunger, they decided that the compass was wrong, and if by accident they had not stumbled upon a trapper's hut where they secured food, and were started in the right direction, there is no telling what might have happened to them. This is as good an example as I have ever experienced of how easy it is to become lost, through over-confidence, in a country

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where one would almost think that a child would be safe.

One should always study a map of a new country, or better, carry one with him and the first thing on leaving camp, consult the compass, decide what direction he is going in and pick out if possible a landmark plainly visible to travel by; thus it is not necessary to continuously consult the compass for correction. If you march northwest, returning on a southeast course, it will bring you back in the general direction of camp. But unless you know the country you stand a good chance of going right on by it, as you are reasonably sure to be a few degrees out at the beginning of the return trip, and this means a good deal by the time you have traveled back five miles or more, as the angle of deviation is constantly getting wider at the base. Consequently, you must carefully watch the country to note its general lay on the way out, and correct the course by it as you return.

Of course, if there are conspicuous landmarks in sight there is little cause for worry, although in a mountainous country one can often get as badly turned as in a jungle by mistaking one hill for another.

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But in a flat, thoroughly wooded section some smaller object must of necessity be selected, a clump of spruce, a dead stub or possibly a couple of trees taller than their fellows that dominate all others; perhaps one with a misshapen top that is easily recognized at a distance. If there is nothing of the kind to help, one must be continuously consulting the compass, not every half hour, but every few minutes, to keep the line. Even the most experienced timber cruiser cannot travel a strange, unbroken country successfully by the compass alone. He must have a map or at least a definite impression of the lay of the land ahead of him, otherwise he will do a lot of extra tramping correcting his mistakes before reaching his destination. One cannot trust the wind, for it will often change and throw him completely off. The stars are only of use at night and one cannot tramp the forests in the dark, despite what we read of James Fenimore Cooper's characters. The sun is often totally obscured for days at a time and will generally disappoint one when most needed. But if one knows the way the ridges run in a hill country or the direction of the principal stream he has a guide to be depended upon for general direction.

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One often hears old-timers tell of the many ways a woodsman can keep his direction without a compass,—that the tops of the tallest spruce tip to the south, that the moss grows thickest on the north side of the trees, etc, but these wood signs are far from convincing or reassuring to the novice who is lost. Only a good woodsman reads them successfully and he generally has plenty of time at his disposal, knows how to care for himself and is used to hardship. It would be no great matter if he were lost for a week. But the sportsman living in a well furnished steam-heated apartment with only a couple of weeks to spend in the woods, must of necessity see things from a different viewpoint. Also the woods signs vary in different localities. I have found that the prowling winds will affect the tops of the firs and where they might tip south in one country, you would find them leaning to the east in another.

One of the commonest ways of getting lost is to lose a trail; if you take one always note its general direction by your compass—for if you are enticed off of it and do not know the direction in which it leads you will never know how to regain it. One will follow a trail that seems per-

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fectly plain and indeed it is as long as one is walking along it, but wander off for a few hundred yards, and turn back and you will be surprised how hard it is to find again. It is the simplest thing to walk right across it and get completely turned around trying to regain it. For the trail that is plain while you stand on it and look at it lengthways may be very indistinct when you stand sideways and only see a cross section of it.

I left a trail once with a guide who was one of the best trackers with whom I ever hunted. We followed a track for but a few hundred yards and accidentally circled, crossing the trail without recognizing it, intent only on the track we were following. We were three hours wandering around before we regained it. Fortunately, we trusted our compass, though it seemed to lie and try to guide us directly opposite to what we thought was the right direction.

And that is the keynote of success in timber cruising; trust your compass if 999 men say you are wrong, for the chances are a thousand to one that your compass is right. Believe it, no matter what happens, for it is your only salvation if lost. And if you lose faith in it be stubborn and

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follow it anyway. Consult it continuously, take your course by the dial to some object and do not start for a new object without a compass correction or you will begin to bear off one way or the other to some extent, generally to the right. Study your map and practice with it and your compass, for only practice will make you proficient in the use of it.

The inexperienced are forever getting mixed up with a compass because they do not take time for careful calculation and are over-confident. If you haven't a map make a rough one as you go along. It may be invaluable on the return trip when the country will look entirely different to you. And if you are lost keep cool and trust that compass.

CHAPTER XVI

BIRD DOGS AND HOUNDS

THERE is nothing which contributes so much to a sportsman's pleasure in the field as his faithful helper and friend, the dog. Of all your shooting companions there is not one that works his way deeper into your heart than he does. It makes no difference what manner or kind of dog he is, be it pointer or setter, foxhound or beagle, spaniel or bay dog, he is your dearest and closest shooting pal. To begin with, he is always a great flatterer, and who is not susceptible to flattery? You never stopped to think of it? But it is so. His admiration for you, and the affection which he lavishes upon you, is the craftiest and most subtle kind of flattery. He flatters you in so many ways; in his desire to be ever beside you; and in the expectant way in which he watches your shots, as much as to say, "I was sure that you would hit that one." Last, but not least, his unfailing good nature. What could equal that? Wet or dry, parched with thirst, or shiv-

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ering in the snow, in good luck or bad luck, with a warm bed and a full belly, or without either, your dog is the one friend on whom you can depend, under all conditions, to look up at you with love and affection in his eyes, to kiss your hand in contentment, just as you two are together for the sport which you both love.

I have owned all sorts and conditions of dogs, hounds and bird dogs, pointers and setters of high degree, plain nigger dogs, picked up on the plantation, whose only claim to blood lay in the quality of their nose, noisy little beagles, and stately, morose foxhounds, and just plain, everyday curs, but have never yet owned a dog in which I could not find a lot of good points to like and appreciate and as I look back, it is more than I can say for a lot of human animals that I have run into.

The trouble with most people, as far as their dogs are concerned, is that they treat a dog just like a dog, and no better. They don't mistreat him, but they make that fatal mistake of always remembering that he is "just a dog." If they could only forget that and treat him like a human being, the dog would soon forget himself and rise to heights of canine intelligence of which they

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never thought a four-footed animal was capable.

As Bosicotte summed it up, "Treat a dog like a man, and you will have a noble animal; treat him like a dog and you will have a poor beast that knows more than you do, because he can understand you but you cannot always understand him." This applies just as much to the sick dog as the healthy one, and it is a good thing to remember when a dog is sick. You don't have to be a veterinary to take care of him; try to treat him the way you treat a human being. If he is ill, take him in the house and keep him warm, try to find some symptom in him that you would look for in yourself, and then give him the same medicine that you would take yourself. Don't throw him a bone under the barn floor. An ounce of prevention is always worth a pound of cure. Don't wait until the poor dog is too sick to drag himself around before you try to help him. If you give him five minutes of attention every day, and he is certainly worth that; if you take his head in your hands and talk to him, and pet him a little bit once in a while, you will soon know him well enough to know whether he is feeling all right or if he is getting sick. The only difference between his feelings and yours is

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that he cannot speak to you in your language to complain and if he is a well-bred dog he probably wouldn't complain as much as you would, even if he could talk.

There is as much innate nobleness in a well-bred animal as there is in a well-bred person, and the most refined and delicate disposition is no more responsive to kindness than a thoroughbred dog or horse.

Speaking of dogs brings back to my mind the vision of my first shooting companion. Spot was a black and white foxhound, a cross between the fast Southern racy type and the slow, full-voiced New England hound. He had all the size and bone and the voice of the New Englander, plus the speed and short ears of his Buckfield Blue ancestors. Spot wasn't a particularly handsome hound, but I thought he was the most beautiful one that ever lived. I don't believe that there was ever any finer affection between two people than that of Spot and mine. He was distinctly a one man dog. Crazy as he was to hunt, no one else could ever entice him to go with him, nor would he, as most hounds do, wander off and range the woods by himself, but when I put on an old hunting coat and picked up my gun, he was about

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the happiest fellow one can imagine. He was probably more responsible for the fact that I am a good shot today than anything else connected with my training. He had the truest nose, the sharpest voice, and was the fastest trailer I ever saw. Anything that Spot jumped would hole up immediately, or start away on a straight line like a streak of greased lightning. I learned to kill rabbits going just as fast as they could travel with Spot fifteen or twenty feet behind them. Why I never blew his head off I don't understand to this day. He had one peculiar trick which you seldom see in a hound and that is, he would retrieve perfectly the game killed. It was not an infrequent thing for Spot to run a rabbit down in the open, catch him, and lay him at my feet, and if hunting with friends he would beat any number of dogs if they tried to take it way from him, or interfered with his retrieving as he thought he should.

Many dogs are not constant in their affection and lavish it on everybody, but some dogs have one love and one only. Spot was one of those. As I grew up I had occasion to go away. I didn't return for over a year and a half, and in the time I was gone that dog never went out

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hunting. He simply wouldn't hunt with anybody else.

Another marked experience that I had a few years later was with a beautiful old New England foxhound (named Juno), that belonged to a friend of mine. Juno was one of the typical black, white and tan hounds, big boned, loud voiced, twenty-four inches to the shoulders, and twenty-two inches across the ears. The nearest approach I ever saw to Juno was in the Winchester advertisement that used to hang in the local sporting goods store. Many of you will remember that picture if you care for hounds.

Juno was getting old. She had raised several families of puppies for her master and, as the country was particularly hard in our section, he decided to sell her. Juno was sold to a man living about thirty miles distant. A few days later he received a letter from the man saying that Juno had broken her collar and gotten away and a couple of hours after the postman arrived, Juno walked in.

She was sent back to him the next day and the following week, after keeping her chained up, he took her hunting. This time she knew the way and the next morning she was back home. So my

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friend decided that Juno would have to go farther away and he sold her to a man in another state, about one hundred and forty-five miles from where he lived.

Juno was put in a big box with a little straw, a tomato can in the end of it for water, and a couple of dog biscuits, and so she left. He didn't hear from that man regarding Juno for about six weeks and one frosty morning he heard a whining and scratching at the door and when he went down to open it, Juno, or what had once been Juno, staggered in. There was hardly an ounce of flesh on the dog's body, her nails were worn down to the quick, her feet were torn and bleeding, and she was almost starved to death, but she had found her way home. How that dog ever traveled and found her way back all that distance through the rugged, wooded and mountainous country, after having been delivered over the steel rails in a closed freight car to her destination, is more than I can imagine. How many hundreds of miles she had covered in finding her way home, her condition testified to.

Needless to say, that man got his check back by the next mail and Juno stayed home to end her days. When she got too old to follow us

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afield, she spent her declining days teaching the young puppies on two old swamp rabbits that lived in a little valley back of the house, and I hear her wonderfully melodious voice now, resounding back and forth across that valley, almost as distinctly as I heard it so many years ago.

I have always felt that there is something more endearing in a hound than in a bird dog. The bird dog is a sort of superior being who possibly isn't quite as demonstrative in his affection as a hound and he is more headstrong, but he loves you just as dearly.

Thinking of bird dogs, I always recall first a brace of black and white pointers, the finest of their type that I ever saw, that belonged to an old Englishman who gave me my first lesson in partridge shooting. These dogs were as pretty a pair as it was ever my pleasure to shoot over. They worked together perfectly and backed each other in splendid style. Lord and Lady Algy were their names, and I have seen Lady point a covey while hanging on the top rail of a fence when she got the scent in the act of scrambling over. I have also seen the same dog in hot, dry weather, at the end of a long day's tramp, lie

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down on her side on a point and slowly wag her tail until you came up.

I always learned something more than the act of shooting when I was with this sportsman. I learned how to treat a dog; he talked more to the dogs than he did to me and they understood every word he said.

When we quit a field to drive to stubble, some little way off, the dogs got in the back of the cart and rode, and when we got home at night after a hard day they were given a hot meal and their feet and ears were gone over to pick out the thorns that were in them and then rubbed with lard to heal the scratches. Just as soon as we lit our pipes they would come up and place their forepaws in our laps to get their nightly inspection. And if it had been cold and wet they each had their drop of brandy to ward off rheumatism. They did not groan and squirm in their sleep as so many dogs do, because they slept comfortably.

Some years ago, while hunting in the South on a friend's estate, I made the acquaintance of Laddie, a thoroughbred pointer of the bluest blue blood. Laddie, I believe, could trace his ancestry back a great deal farther than I ever could,

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and I always felt that I had reason to be proud of mine. Laddie showed you that he felt the dignity of his ancestry, and that it weighed heavily upon his mind that he should always live up to the fine long record behind him.

Laddie was never undignified, he was never effusive, he never lost his poise in the field or at home, no matter what society he was in. He won a field trial when he was fifteen months old and he never showed any particular feeling about it, one way or the other. He was as dignified and held himself just as much aloof from common dogs, or dogs of less rank than himself, at that tender age, as he did later. In fact he was royal all the way through. He knew it and took it for granted that everybody else knew it, and he never allowed anybody, including himself, to forget it.

He was the largest, healthiest and best looking liver and white pointer that I ever saw. His head was as perfect and clear cut as some Grecian cameo.

At the same time Laddie was human, or I should say canine, to a degree, and as affectionate as any dog I ever knew. I have no doubt he knew perfectly well that he was good looking, he always liked to show himself off, but he was per-

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fectly willing to tear himself up in the green briars and blackberries. He started in as a pup on woodcock and, as he gained in strength and speed, he followed the older dogs out partridge hunting and soon was an acknowledged leader. I can see him now, galloping back and forth over a wheat stubble, his head held high in the air, and his nose would scent a covey of birds just as quickly there as it would on the ground.

Laddie knew just as well what we were going to hunt as I did, and if we put on rubber boots when starting out in the morning, he knew quite well that we were going duck shooting and would not take him, and he would lie down discontentedly again, by the fire. Finally, one day in hunting along some river farms where the partridge shooting was exceptionally good as a rule, we struck an off afternoon, and passing a friend's house he hailed us and invited us to go off to a point in front of his farm where he had a blind baited, and share the duck shooting with him.

Laddie sat discontentedly on the shore as we pushed off in a skiff and ran up and down the edge whimpering as we rowed away, the blind being about one hundred yards off shore. Fi-

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nally, as we paid no attention to him, he went back and lay down with his nose on his paws watching the blind. A little while later a bunch of ducks flew into the decoy, and on the report of the two guns Laddie was up, tearing back and forth along the beach, barking and whining, for once in his life excited. He couldn't, however, overcome the pointer's natural dislike for water and finally he subsided into his nest on the beach until another flock came along.

This time he waded out, up to his chest in the water, crying and whimpering and looking more miserable than I had ever seen him before. In a few minutes we forgot all about Laddie; the ducks were coming in fast. The evening flight was on and flock after flock were going past, occasionally one coming in. We had several ducks in the water but did not have time to bag any. All the time we had been shooting I was dimly conscious of Laddie, whimpering and whining near by. As the shooting let up for a few moments, I looked out and heard a whining close by and, lo and behold! just outside of the blind was Laddie in about ten feet of water, yelping and crying, after taking the first swim he had had in his life, vainly trying to climb into the blind

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to find out what the devil we were all shooting at!

After much excitement on everybody's part, we finally pulled him in with us and when we shoved off later to pick up our ducks, the last thing in the boat was Laddie who jumped out of the blind into the skiff, at the peril of his own limbs and nearly swamping us. He had watched from the blind as we shot and voiced his appreciation of our marksmanship by yelping every time a bird hit the water. It was dark when we shoved off to get them and we never could have picked up half our day's bag if it had not been for him. Standing in the bow of the boat, he would indicate, by pointing, where they lay and one by one, as we rowed in the direction he was watching, he picked them out of the water and dropped them in the bottom of the boat as proudly as if he had shot them himself.

Laddie had made himself a valuable asset to our duck shooting equipment and, long after the old fellow was too stiff in his joints to stand a day's hunting in the stubble, he still went out duck shooting, with a blanket provided to keep him warm in the blind, and had a wonderful time picking up the ducks and dropping them

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into the boat, a pleasure of which nobody ever thought of depriving Laddie.

When my time comes, I hope I shall pass out as nobly as poor old Laddie did. It was a couple of years ago. Laddie had not been out with me for two seasons and when I went down to the old hunting ground, he scrambled to his feet and came gravely forward to greet me and pay his respects. His joints were stiff with age and rheumatism; he could hardly see, for his eyes were covered with cataracts, but he was still a beautiful old dog. "Clayton," I said, "I want to take Laddie out tomorrow for I may not see him again." The old fellow blinked his watery eyes and wagged his tail slowly, and then, with a sigh of contentment, lay down before the stove. "Oh! he can't stand it," Clayton replied. "We will come back tomorrow and give him a whirl down in the branch if you wish." The old fellow was restless and got up several times to have his head scratched.

The next day was devoted to ducks but about noon we returned and the gum boots were changed for shorter leather ones and the old ten-bore for a light, short twelve.

Laddie knew it was his day and "stood by" as

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we got ready. He rode in the cart between my knees and I lifted him out when we got to the field where we tied up the horse.

When Laddie found a place where he could get through the fence, the other young dogs had covered half of it. Away he went at a gallop—head and tail up—but in a few hundred yards he had slowed down to a trot.

“Clayt” sat on the fence and the young dogs finally came back. “Well,” he said, “I reckon there isn’t anything here this evening.” Laddie was a spot on the far side of the immense field, slowly moving along. As I watched him, he drew a corner, stopped, moved up, froze.

“Clayt,” I said, “look at Laddie!”

“Well the old son of a gun!” he exclaimed, “fooled the young ones. Get your camera out. You’ll never get another picture of him.” As we came up, the young dogs backed and old Laddie moved his head about to look at us and slowly wagged the tip of his tail as if to say, “I found them.”

I shall never forget that picture, on the side hill with the setting sun back of the trees and the young ones backing the old master, as with square muzzle stretched forward slightly to the

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side, one forepaw up and tail out straight, he stood—a beautiful picture.

“Clayt,” I said, “get those two young cubs and tie them to the fence. This is Laddie’s day.” Meanwhile the old fellow stood like a rock. When “Clayt” came back I stepped in, and a small covey bounced with a roar and started for the branch, but three stayed with us and Laddie retrieved them. Into the swale we three went and six times he pointed and six times a single came to bag, though several times we backed each other with a second shot so that Laddie would not be disappointed.

Finally we came out and the old fellow slowly dragged himself across the field to the cart.

When we got home, after an early dinner, he placed his noble head on my knee and I stroked it for a while. Then he stretched himself out before the fire, head on paws, with a sigh of contentment, to dream over the day. I dreamed with him for a while and then leaned over to stroke his head—it slipped off the paw on to the rag rug—Laddie had passed.

In remembrance of this old fellow, let me say a few words in conclusion. Treat your dog like an equal. Don’t expect him to go through

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briers that you refuse to share with him. If they are too thick for your canvas, they are too thick for his skin. The man that gets the game is the one who is in the briers first, and calls his dog in. I have seen many a good dog give up early in the day—discouraged by a lazy hunter.

And don't forget, the cheapest thing that you can expend on him is encouragement. Many and many a time near the close of a hard day, when my dog came up tired and stood dejectedly beside me, I have sat down to smoke, called him to me, talked to him, petted him for a minute, told him what an excellent dog he was, and then, at a cheerful "Hi! On!" have seen him spring forward like a new animal to hunt another field. Whereby I added a couple of brace to my bag. Believe me, it pays!

CHAPTER XVII

FIELD ETIQUETTE

THERE is nothing of more importance to a man's success in the field than his respect and consideration for his shooting companions, and I know of no better way to quickly judge a man's full worth than to take him on a shooting trip. As a writer on the subject said, "The field is the touchstone of the man." Have you ever suffered having what was otherwise a perfect trip utterly ruined by one of the party, due to his greed for shots, carelessness as to the safety of others, grumbling at the luck or conditions, and shirking his share of the work in camp? I have been so unfortunate, but it served its purpose, for it made me a most careful judge of human nature.

Have you ever hunted under the most adverse conditions with a partner who remained cheerful and enthusiastic and took everything in good part, no matter what happened; who laughed

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when the weather kept you indoors day after day; who hunted cheerfully when the dogs worked badly or the birds were scarce and wild; who did his share of the work in the blind in zero weather and treated it all as a joke? I have, I am glad to say; and that, though the luck was as bad as possible and everything went wrong from start to finish, the memory of the experience will always remain bright, due to the companionship of such a thorough gentleman.

Field etiquette is truly an unwritten law, recognized by a majority of sportsmen but unfortunately not put into practice by some. Almost any one can become a good shot by practice, but true chivalry and courtesy are inherent.

I have heard European sportsmen speak disparagingly of American sportsmen's manner in the field. In Europe only the wealthiest can afford to shoot, while here the sport is free to all, from the humblest to the highest in the land, and this may be responsible for the apparent crudeness in our methods, for wealth, rank and education undoubtedly give one the advantages to acquire a courteous manner. But I have seen our unlettered woodsmen show a finer feeling for the true ethics of field sport than many men of

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position who were considered to be irreproachable sportsmen.

Show consideration for your companion. If he is young or inexperienced, place him where he will make the best of his shots and coach him tactfully, so that he may increase his score. Be not chary of good information; remember that you, too, were young once and craved a better knowledge of the sport. You probably looked up to some older sportsman as he does to you now.

If your companion is less successful than you are, give him the choice and majority of the shots. You will both do better if you don't race for them. But if your companion is too eager and out of turn, quietly remark, "Mine, I believe." This gentle hint will be sufficient with most men.

When the writer was young at the game, he was very nervous and quick—and also an exceptionally good shot for his age. Eagerness often tempted him to take shots from older and slower hands that were not properly his. He quickly learned his mistake, but in the interim, undoubtedly lost some excellent invitations he might otherwise have received.

When in a thick covert, do not flush the birds



Upper—Loading, muzzles down towards ground, butt under arm. Tip up the butt to close the weapon, never tip up the barrels.

Lower—Proper position of right hand in going through thick cover. Fingers over trigger-guard to protect it from twigs or briars, stock close to body.



Upper—Taking quick shot to the rear. Look out for your companions!
Lower—Walking in to take a shot over dogs, muzzles high and butt under armpit ready for quick work.

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ahead of your dog without warning your companions. Promptly call "point" in a clear voice and await a reply. This gives your partners a chance to place themselves properly to take a possible shot, and warns them where to expect your fire from.

When a bird flushes, sharply call "mark" or, if you see the direction of flight, call "mark right" or "mark left" as the case may be.

Do not command another man's dog except with his permission and then carefully note the owner's method of handling. Also, use few words in commanding him, and speak sharply and distinctly so that he will understand you. But never pass over a disobeyed command. Never shout at him and never run after him. The following simple commands are the approved ones in use among knowing sportsmen:—

To make your dog range, "Hi! On!"
To make your dog stand, "Toho!"
To make your dog come to heel, "Heel!"
To go carefully, "Steady!"
To seek dead game, "Seek dead!"
When found, "Fetch!"

And don't neglect to spare a minute to praise him when he does these things well. No creature

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craves love and appreciation more than your dumb hunting companion. A dog asks for little besides someone he may love.

Don't shoot into a flock of ducks on the water; you have infinitely more chance of killing on the wing, for a duck on the water is like a well planned battleship, the vital parts are well protected, except the head.

Don't shoot into the center of a rising covey and needlessly cripple a lot of birds. You will kill far more by picking out one from the right or left, as your position may be from that of your companion. You will not spoil his shot and will not scatter the covey so much.

Do not waste your companion's time by insisting that a bird that you thought you grassed be picked up. And do not shoot at game at questionable distances and take the chance of needlessly wounding it. There will be far too many tragedies of the woods that you will never know of, due to careless shooting of game on your part.

The most important thing in field etiquette is to in no way take the smallest chance that will endanger the safety of yourself or your companion. Don't forget that you have a dangerous weapon in your hands and that it is impossible

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to exaggerate your caution. Accidents occur every season that embitter the recollections of some sportsmen all the remaining days of their lives. And if you have ever been seriously shot, as the writer has been, you will appreciate this more forcibly.

The pointing of a gun, whether loaded or positively known to be unloaded, at another should be a criminal offense. The man who knows where his gun is pointed may be surprised if it goes off by accident, but he is seldom disconcerted.

Never shoot at game near a companion, as often, in spite of the greatest caution, a man is hit by an imperfect grain of shot which, for some unaccountable reason, flared off at what would seem to one to be an impossible angle from that of the aim.

Never, under any circumstances, get out of a boat, into a wagon, or over a fence with gun loaded and, whether in the gun room or the field, never accept a gun from another for inspection without first breaking it open.

Most trap guns are made without a safety which is decidedly wrong for, if one gets used to pushing off the safety as the gun is raised to the shoulder in trapshooting, it soon becomes second

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nature to do so in the field, and there is then no longer any reason for carrying the gun with the safety off.

When shooting in thick cover and expecting a shot, carry the gun with the muzzle to the front and high, or gun vertical, the butt in close to the side, just above the hip, with the fingers of the right hand closed over the outside of the trigger guard. Then it is impossible for a twig or bramble to catch in the trigger.

If the gun is a hammer gun, carry in the same manner, with the thumb resting in front of the raised hammers across the false breech, on the plungers. The gun can then never be discharged by accident.

When carrying your gun over the shoulder, always have the trigger guard turned up, otherwise any one walking behind you will constantly have the muzzle waving across his face. It is also quicker to bring the gun to bear on game from this position.

When waiting for approaching game, stand as shown in the picture, with the butt of the gun resting on the thigh with the muzzle high. It is a safe and comfortable position. And always load with the muzzle pointed toward the ground until



CARRYING A GUN.

Upper—The right way; stock grasped firmly in right hand, gun across shoulder with barrels down so that muzzles are always high and gun can be quickly brought into position for unexpected shot.

Lower—The wrong way; forehand down on shoulder, so that muzzles are generally low and likely to swing across companions, no firm grip on weapon, and cannot be quickly swung into position.



WAITING ON A STAND.

Upper—Good position. Muzzles high, butt resting in groin, taking the weight of the weapon off of the arms.

Lower—Careless position. Weight of weapon on arm, not ready for shot; muzzles covering companion if you turn around.

Field Etiquette

the piece is locked; and in taking high overhead shots always carry the left hand well forward, so as to get more control of the gun, and brace the right foot well back. It will steady the aim and also will absorb the shock of recoil.

One thing more on the handling of the gun. Don't become a pottering shot or one that draws slowly on a bird and follows it around in its flight. Such a man may be a good shot, but he certainly never shoots in good form and is not a pretty shot. Furthermore, he is often a dangerous one for, in following the game on which his mind is concentrated, he often shoots dangerously near to his companions.

Your really good shot invariably throws his gun to his shoulder at what he estimates is the proper distance ahead of the game and pulls the trigger.

Also, the pottering shot often deprives his companions of shots at single birds, because by the time he has fired and missed, it is often too late for the others to shoot.

There is an unwritten law that the shot properly belongs to the man in front of whom the bird flushes. After he has missed, the others are at liberty to shoot, though it is not always the

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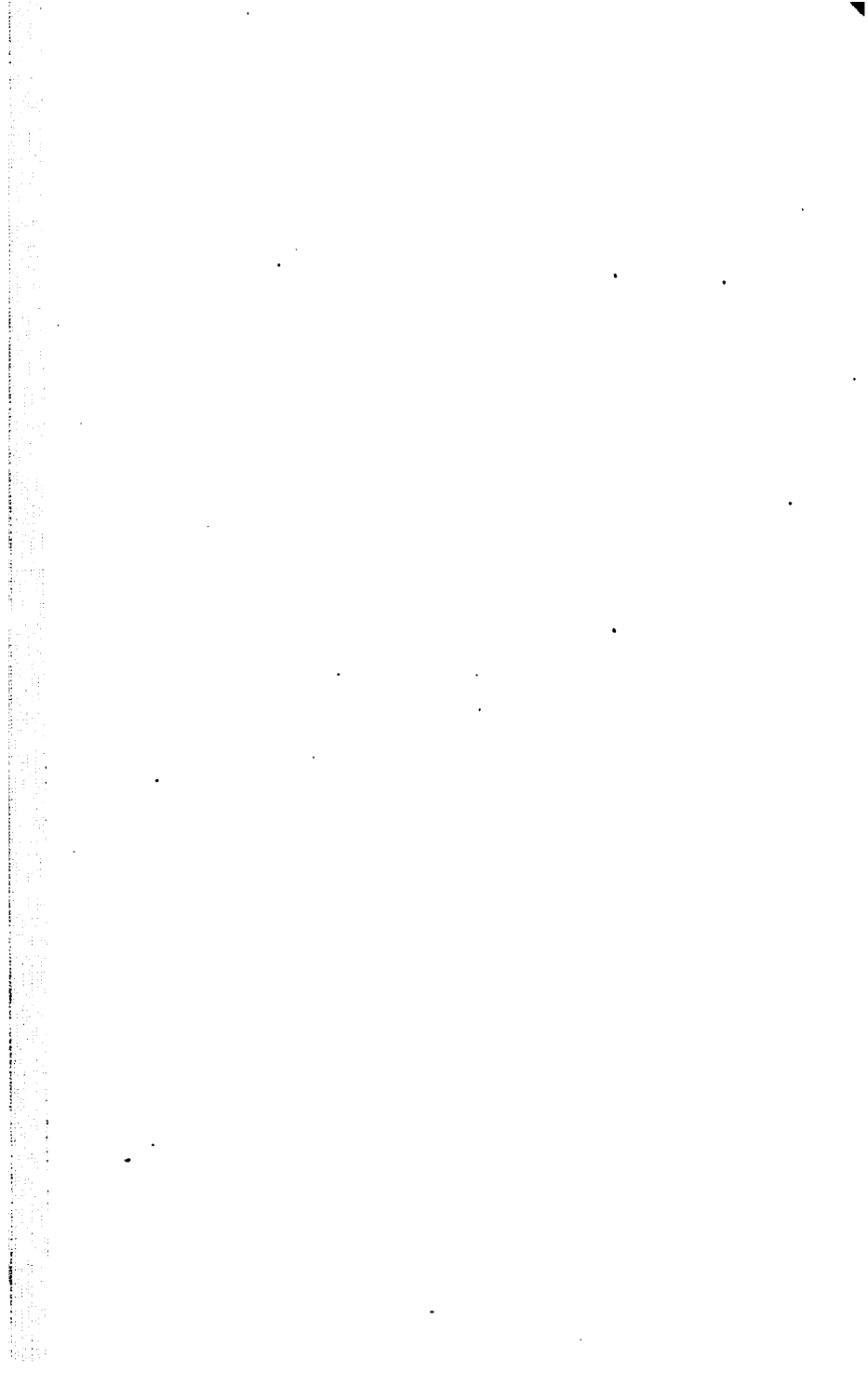
diplomatic thing to do to "wipe the eye" of a touchy sportsman.

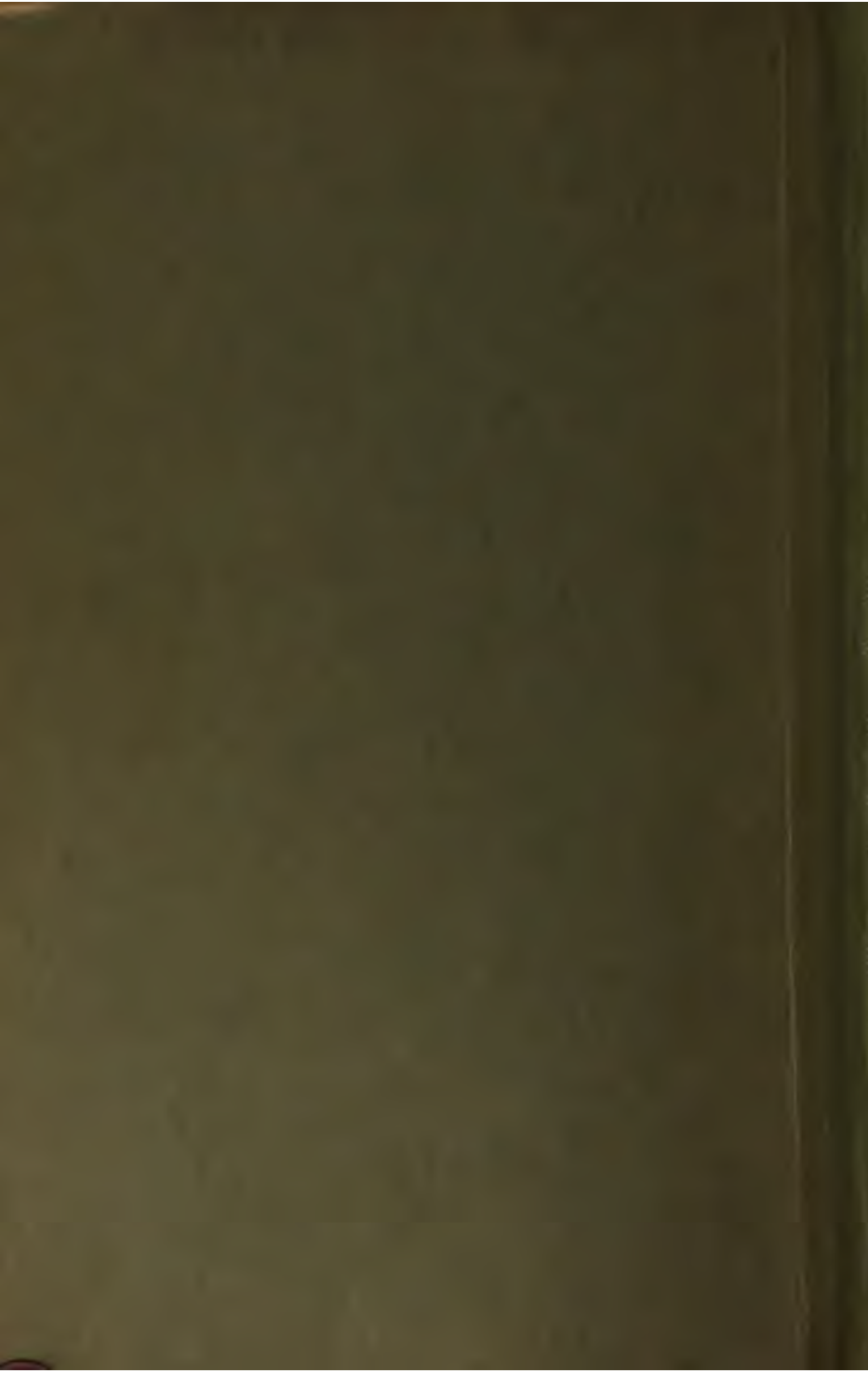
Lastly, do not be a bore! If you have an off day—and the best of us do—do not make an excuse for your misses; quietly admit your fault to your companions and they, as well as yourself, will forget it the quicker. And you will undoubtedly shoot better too, if you dismiss it from your mind.

There is little more to be said on the subject of field etiquette, but if you carefully consider the hints that I have given, you will see that, aside from courtesy, they one and all lead to greater proficiency in the sport.

In the field with good companions, lay aside all selfishness and be a sportsman in every action as well as in name. Unless this lesson is thoroughly learned, one's society will never be missed.

A man may never gain the reputation of being an expert shot, but, by self-sacrifice, forbearance, and considerate politeness, he can acquire a reputation in the field as a gentleman that will carry him far in the great outdoors.





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